



BRANDEIS UNIVERSITY BULLETIN 66/67

The
Graduate School
of Arts and
Sciences

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OCTOBER 5, 1966



**Brandeis University
Libraries**



**Brandeis University
National
Women's Committee**

COVER: The statue of Louis Dembitz Brandeis on the Brandeis University campus executed by Robert Berks under a commission from Lawrence A. Wien of New York. Dedicated by Chief Justice Earl Warren on the 100th anniversary of the birth of Brandeis, November 1956.

This publication is correct as of August 1, 1966.

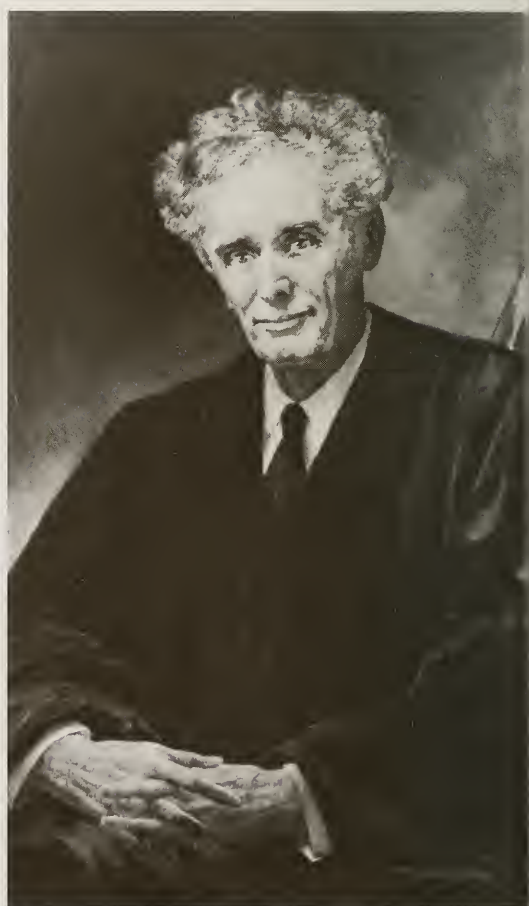
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Brandeis University

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Graduate School
of Arts and
Sciences
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W A L T H A M , M A S S A C H U S E T T S



“It must always be rich in goals and ideals, seemingly attainable but beyond immediate reach. . . .

“It must become truly a seat of learning where research is pursued, books written, and the creative instinct is aroused, encouraged, and developed in its faculty and students.

“It must ever be mindful that education is a precious treasure transmitted—a sacred trust to be held, used, and enjoyed, and if possible strengthened, then passed on to others upon the same trust.”

—from the writings of
LOUIS DEMBITZ BRANDEIS (1856-1941)
on the goals of a university.



“Brandeis will be an institution of quality, where the integrity of learning, of research, of writing, of teaching, will not be compromised. An institution bearing the name of Justice Brandeis must be dedicated to conscientiousness in research and to honesty in the exploration of truth to its innermost parts.

“Brandeis University will be a school of the spirit—a school in which the temper and climate of the mind will take precedence over the acquisition of skills, and the development of techniques.

“Brandeis will be a dwelling place of permanent values—those few unchanging values of beauty, of righteousness, of freedom, which man has ever sought to attain.

“Brandeis will offer its opportunities of learning to all. Neither student body nor faculty will ever be chosen on the basis of population proportions, whether ethnic or religious or economic.”

—PRESIDENT ABRAM L. SACHAR, at the ceremonies inaugurating
Brandeis University, October 8, 1948

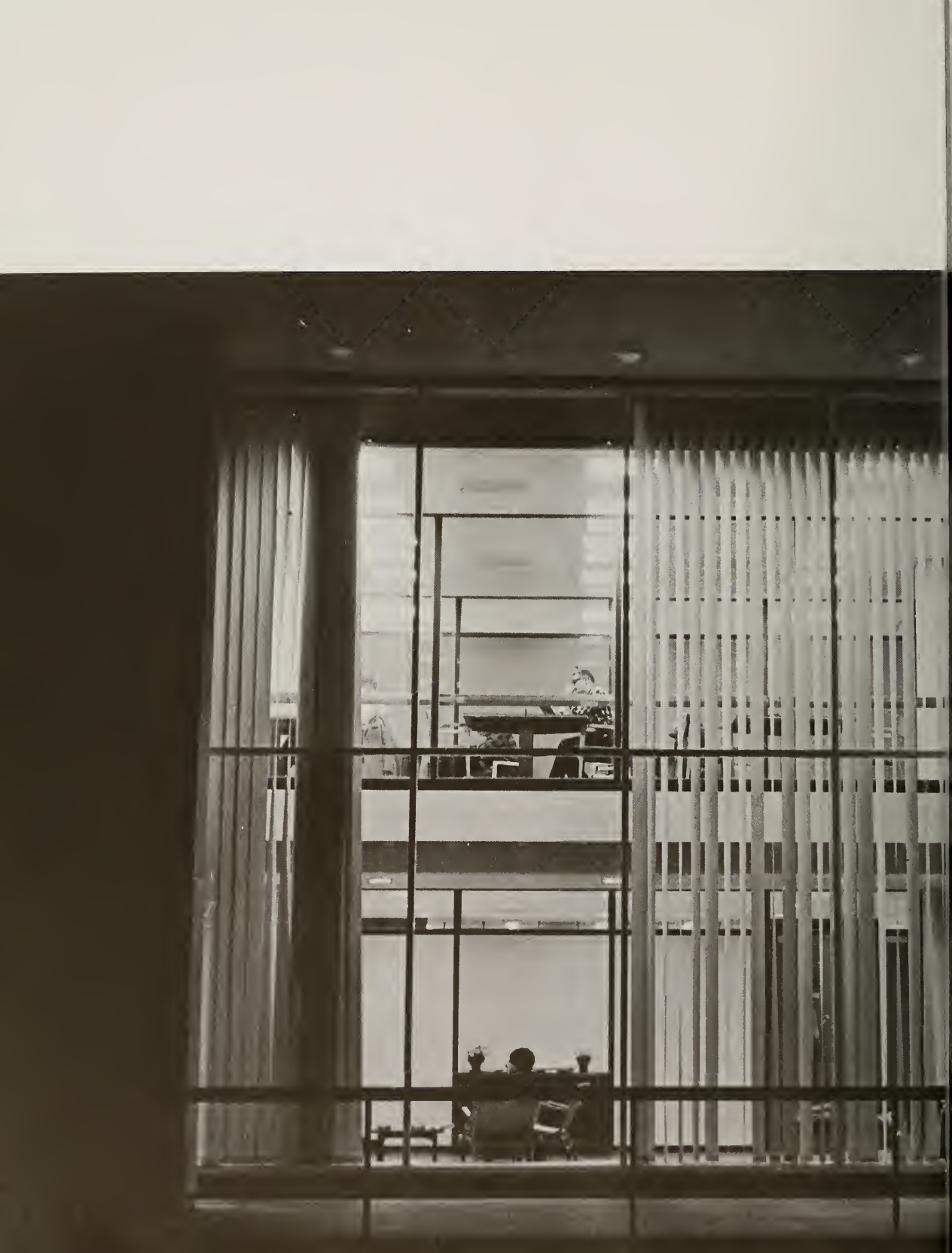


Table of Contents

Academic Calendar	8
Brandeis University	11
The Graduate School of Arts and Sciences	41
General Information	41
Academic Regulations	50
Degree Requirements	56
Fees	61
Areas of Study and Courses	68
Fellowships	178
Directories	189
Index	203

Academic Calendar 1966-1967

Fall Term

Tuesday	September 20 and	Registration, including payments of fees.
Wednesday	September 21	Students who register later will be fined \$10.00.
Thursday	September 22	Medical examinations for new students. Failure to keep appointment results in \$5.00 fine.
Monday	September 26 and	Opening days of instruction in all courses.
Tuesday	September 27	
Thursday	September 29	No University Exercises.
Thursday	October 6	No University Exercises.
Tuesday	October 10	Final date for registration.
Friday	October 14	Final date for changing program without \$10.00 fee.
Friday	October 21	Final date for adding courses with \$10.00 fee.
Friday	November 11	No University Exercises.
Thursday	November 24 and	No University Exercises.
Friday	November 25	
Thursday	December 1	Final date for dropping courses with \$10.00 fee.
Friday	December 2	Last date for February degree candidates to submit final drafts of dissertations to department chairmen. Final date for February degree candidates to submit "Application for Degree" to Graduate School Office.
Wednesday	December 21	Winter recess begins after last class.
Tuesday	January 3	Classes resume.
Friday	January 6	Final date for faculty certification that February M.A. and M.F.A. candidates have satisfactorily completed degree requirements. Final date for faculty certification that February Ph.D. candidates have satisfactorily completed and defended dissertations.
Monday	January 9 and	Registration for Spring Term for all currently registered students. Students will be fined \$10.00 for later registration.
Tuesday	January 10	
Friday	January 13	Final date for February degree candidates to discharge all financial indebtedness to the University.
Monday	January 16	No University Exercises.
Tuesday	January 17 through	Mid-year examinations.
Friday	January 27	
Thursday	January 26	Registration for students entering in the Spring Term. New students who register at a later date will be fined \$10.00.
Friday	January 27	Final date for admission to candidacy for the Ph.D. and for completion of residence and language requirements for all students expecting to have the Ph.D. conferred in June 1967. Final date for deposit of Ph.D.

		dissertations by February degree candidates with the Dean of the Graduate School. Final date for reporting incomplete grades for Spring Term 1965-66.
Friday	February 3	Grades due for all Fall Term courses.
Spring Term		
Wednesday	February 1	Opening days of instruction in all courses.
Thursday	February 2	
Thursday	February 16	Final date for changing program without \$10.00 fine.
Wednesday	February 22	No University Exercises.
Thursday	February 23	Final date for adding courses with \$10.00 fee.
Wednesday	March 1	Final date for registered students to file "Application for Financial Aid" for 1967-68.
Monday	April 3	Final date for dropping courses with \$10.00 fee. Last date for June Ph.D. candidates to submit final drafts of dissertations to department chairmen. Final date for all June degree candidates to file "Application for Degree" with Graduate School Office.
Friday	April 14	Final date for faculty certification that June M.A. and M.F.A. candidates have completed foreign language requirements.
Friday	April 21	Spring Recess begins after last class.
Wednesday	May 3	Classes resume.
Monday	May 15	Final date for faculty certification that June Ph.D. candidates have satisfactorily completed and defended dissertations. Final date for faculty certification of Master's theses. Final date for certification that June M.A. and M.F.A. candidates have passed qualifying examinations.
Monday	May 22 through	Final examinations.
Friday	June 2	
Tuesday	May 30	No University Exercises.
Monday	June 5	Grades due for June degree candidates. Final date for deposit of Ph.D. dissertations with the Dean of the Graduate School. Final date for reporting incomplete grades for Fall Term 1966-67. Final date for June degree candidates to discharge all financial indebtedness to the University.
Friday	June 9	Grades due for all Spring Term and full year courses. Final date for admission to candidacy for the Ph.D. and completion of residence and language requirements for students expecting to have the Ph.D. degree conferred in February 1968.
Saturday	June 10	Baccalaureate.
Sunday	June 11	Commencement.



Brandeis University



Brandeis University has set itself to develop the whole man, the sensitive, cultured, open-minded citizen who grounds his thinking in facts, who is intellectually and spiritually aware, who believes that life is significant, and who is concerned about society and the role he will play in it.

The University will not give priority to the molding of vocational skills, nor to developing specialized interests at the expense of a solid general background. This does not mean that what is termed practical or useful is to be ignored; Brandeis merely seeks to avoid specialization unrelated to our basic heritage—its humanities, its social sciences, its sciences and its creative arts. For otherwise, fragmentized men, with the compartmentalized point of view that has been the bane of contemporary life, are created.

A realistic educational system must offer adequate opportunity for personal fulfillment. Education at Brandeis encourages this drive for personal fulfillment, but only within the framework of social responsibility. Thus Brandeis seeks to educate men and women who will be practical enough to cope with the problems of a technological civilization, yet mellowed by the values of a long historical heritage; self-sufficient to the point of intellectual independence, yet fully prepared to assume the responsibilities society imposes.

Brandeis University came into being because of the desire of American Jewry to make a corporate contribution to higher education in the tradition of the great American secular universities that have stemmed from denominational generosity. By choosing its faculty on the basis of capacity and creativity, and its students according to the criteria of academic merit and promise, the University hopes to create an environment which may cause the pursuit of learning to issue in wisdom.



The Famous Three Chapels

This initial and unwavering commitment to excellence has earned early acceptance for the University within academic circles. Full accreditation came to Brandeis at the earliest possible moment. In 1961, Phi Beta Kappa granted permission for a chapter (Mu of Massachusetts) to be formed on its campus. Most recently the Ford Foundation assessed the record and potential of the University and buttressed their belief in its future with two major challenge grants to Brandeis, an accolade accorded to only five universities in the nation.

University Organization

Brandeis is one of the few small universities in the United States. The academic programs, described below, are each limited in size to encourage quality and integrity of intellectual achievement. There is constant interaction between college, graduate and professional schools, and institutes. The accomplishments of one set automatic pace for the others, and the interchange benefits all, creating an intellectual environment of decided vitality. Additionally, the organic richness of the extensive research activity fertilizes the undergraduate root of the institution no less than the graduate and professional programs.

The College of Arts and Sciences

In keeping with its general objectives, Brandeis attaches the greatest of importance to the liberal arts curriculum. It is designed to offer full academic opportunities for those students planning to pursue graduate or professional studies as well as those whose educational objective is the baccalaureate degree.

The College of Arts and Sciences offers instruction in the Schools of Creative Arts, Humanities, Social Science and Science. Regularly matriculated students pursuing courses of instruction under the Faculty of Arts and Sciences may, upon satisfactory completion of the first year, continue as candidates for the Bachelor of Arts degree.

Established in 1948, full accreditation was received by Brandeis' College of Arts and Sciences from the New England Association of Colleges and Secondary Schools in 1953.

(Full information is available in the catalog of the College of Arts and Sciences.)

The Graduate School of Arts and Sciences

The Graduate School is designed to educate broadly as it trains professionally. It is sensitive to the fact that as specialization increases within society, the traditional boundaries between the Ph.D. and advanced professional degrees are gradually losing their distinctions. It seeks to achieve a spirit of informality, without sacrificing work disciplines.

The Graduate School of Arts and Sciences offers courses of study leading to the master's and doctor's degrees. Graduate areas include Anthropology, Astro-Physics, Biochemistry, Biology, Biophysics, Chemistry, Contemporary Jewish Studies, English and American Literature, History of American Civilization, History of Ideas, Mathematics, Mediterranean Studies, Music, Near Eastern and Judaic Studies, Philosophy, Physics, Politics, Psychology and Sociology.

The Florence Heller Graduate School for Advanced Studies in Social Welfare

The Florence Heller Graduate School for Advanced Studies in Social Welfare, made possible through the generous grant of the late Mrs. Florence Heller of Chicago, was established at Brandeis University in 1959. Applicants are required to have earned the degree of Master of Social Work at an accredited school and, preferably, to have had experience on a professional level. The program of study leads to the doctorate and is designed to qualify graduates for administrative and consultative roles in established areas of social work, as well as newly emergent areas such as international social work, inter-group organization, labor, industry and government. Emphasis is placed upon community organization, social work administration, and research, making full use of the social sciences.

(Full information is available in the catalog of the Heller Graduate School.)

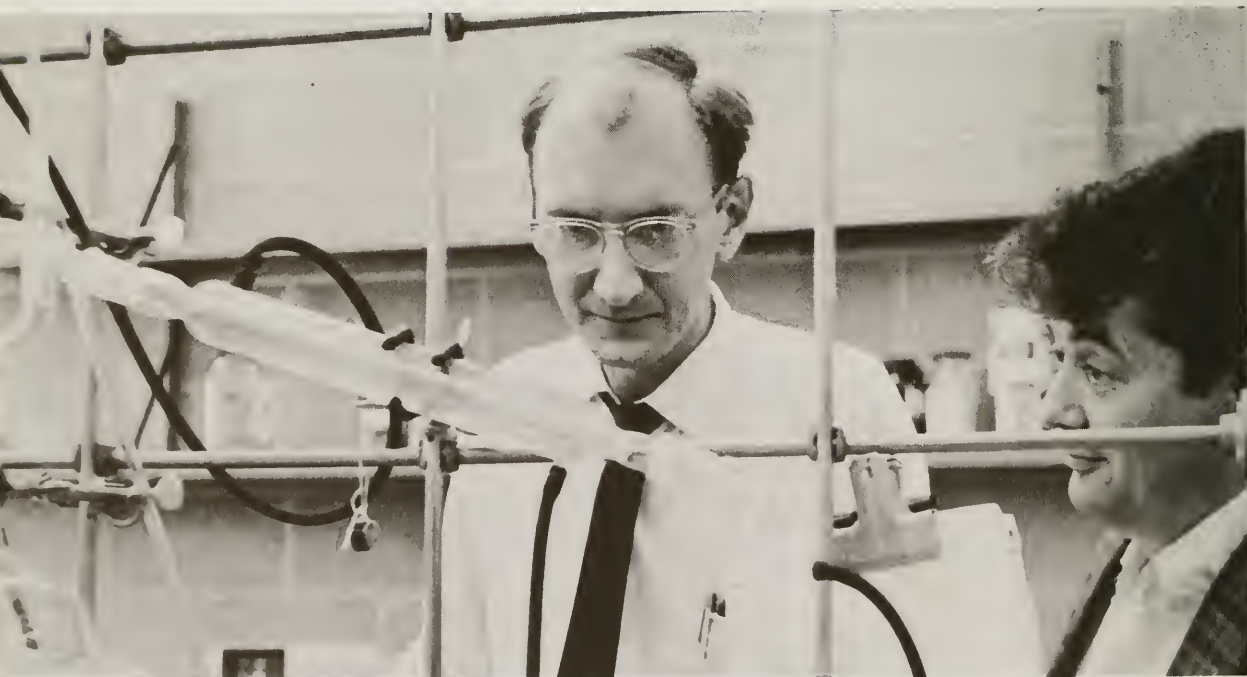
The Kutz School of Biology

The Milton and Hattie Kutz School of Biology was made possible through a gift from the estate of the late Hattie Kutz of Wilmington, Del., who, had previously underwritten a major dining hall-lounge at Brandeis. The school encompasses the University's undergraduate and graduate biology departments. The biology curricula present a comprehensive body of courses that advance from fundamental studies to more complex areas with special heed to new discoveries and the results of current experimentation.

Students are offered a well-conceived balance between traditional background in biology and the thorough discussion of new knowledge constantly developing in this discipline. They are also encouraged to engage in original research and independent study. The biology program, directed and taught by first-rank scientists, also provides research and teaching opportunities for a large number of post doctoral fellows.

A sizable portion of the governmental, industrial and private research grants awarded to the University are devoted to varied projects in biology, some concerned with cancer research. Distinguished scientists appear frequently at colloquia and lectures to explain their investigations.

The Summer Physics Institute in Theoretical Physics



Lown School of Near Eastern and Judaic Studies

Created through the generosity of Philip W. Lown of West Newton, Massachusetts, a Trustee of the University, the Lown School of Near Eastern and Judaic Studies encompasses an intensive teaching and research program in ancient and modern Jewish thought, history, culture and issues. The University has assembled an array of distinguished scholars who, on both the undergraduate and graduate level, offer an unusually broad complex of programs designed to prepare them for scholarly careers or for communal service.

The School includes the Center for Contemporary Jewish Studies, organized for the specific purpose of furthering research and seminars dealing with major contemporary issues. An adjunct of the Center, the Institute of East European Jewish Affairs, is a research program studying the lives and destiny of some three million Jews living in East Europe. Another activity of the School is the Institute for Advanced Judaic Studies, which sponsors research, lecture, colloquia and related publications, as well as offering a number of postdoctoral fellowships.

The Lown School of Near Eastern and Judaic Studies cooperates closely with the American Jewish Historical Society, whose headquarters is established on the Brandeis University campus.

The Poses School of Fine Arts

The Poses School of Fine Arts, established through a gift from Trustee and Mrs. Jack I. Poses of New York City, embodies the broad undergraduate curriculum in the fine arts. It also incorporates the Poses Institute of Fine Arts, which supplements course-work and workshops in painting and sculpture. Plans for launching a graduate program are now under study.

The undergraduate program in fine arts provides a substantial area of studies in the form and meaning of art from the present day to antiquity. The program stresses individual creativity and the varied techniques of the artist.

The Poses Institute of Fine Arts is host to exhibitions of paintings, sculpture, artifacts and other forms of contemporary and traditional art in the University's museum and many gallery halls. It is the focus of the Brandeis art acquisitions program and conducts lecture series and symposia with notable historians, critics and artists. Its annual institutes are concerned with basic issues in the arts and contemporary life. A significant contribution made by the Poses Institute is the award of commissions and grants-in-aid for talented young artists who have completed their formal education and wish to establish themselves as practitioners.

Related Academic Programs

Wien International Scholarship and Fellowship Program

The Wien International Scholarship Program, created in 1958 by the Lawrence A. and Mae Wien Fund, is designed to further international understanding, to provide foreign students with opportunities for study in the United States, and to enrich the intellectual and cultural life of the Brandeis campus.

The Program permits the University to offer scholarships and fellowships covering tuition, room, board and, in rare instances, travel costs, to students from foreign nations. Awards, made for the academic year, may be renewed for a subsequent year. All applicants must possess a thorough knowledge of the English language.

All Wien Scholars study within the regularly organized curriculum, which is supplemented by special seminars, conferences and field trips, planned to provide a broad understanding of many facets of American society.

The Wien Program endorses the participation of accepted students in accredited summer orientation programs, especially in the Boston Area International Seminar, a cooperative effort by Boston College, Brandeis, Boston University, Harvard University, and Massachusetts Institute of Technology. Wien Scholars are also encouraged to participate in the Homestay Program of the Experiment in International Living and in similar authorized programs designed to make the foreign student at home in his new environment.

In 1963 the Wien Program was expanded to include graduate students. A limited number of Wien Fellowships are available to highly qualified advanced degree candidates. Inquiries should be addressed to the Dean of the Graduate School or to the Director of the Wien Program, stating specifically interest in a particular field of graduate study.

Jacob Hiatt Institute in Israel

The University conducts an annual semester Institute in Israel. Open to college and university juniors and selected seniors who have completed introductory courses in political science, sociology, or social psychology, the Institute offers instruction in modern Jewish and Israel history; Israel political and social institutions and the Hebrew language.

The Institute, which is located in Jerusalem and directed by Brandeis faculty, is unique in that it emphasizes first-hand investigation. Formal classroom work is supplemented by seminars with persons prominent in Israel's political and economic life, and fieldwork is conducted at on-the-spot locations such as factories, seaports, labor councils, agricultural settle-



A classroom session in the nursery school

ments, Arab and Christian communities, army training centers and mineralogical exploration points in the Negev Desert.

Enrollment in the Hiatt Institute is also open to a limited number of qualified students from other colleges and universities. Among the colleges and universities, in addition to Brandeis, from which students have come to study at the Jacob Hiatt Institute in Israel are: Antioch, Boston University, Brooklyn College, Bryn Mawr, University of California, City College of New York, Clark, Colby, Cornell, Dickinson, Goucher, Harvard, Hunter, University of Illinois, Jackson College (Tufts University), Oberlin, Ohio State, University of Pennsylvania, Temple, Vanderbilt, University of Vermont, Washington University, Wayne State, Wesleyan and University of Wisconsin.

Center for the Study of Violence

The Center for the Study of Violence was organized to provide, within a scholarly setting, major research and training in the problems of violence and to establish a forum for a continuous dialogue that will reach out to all segments of the community. The staff of the Center, which is an outgrowth of the University's three national conferences on violence, examines the legal, psychological, psychiatric and sociological aspects of violence and develops techniques for its control. In the summer of 1966, the Center

was fully underwritten through endowed funds, the gift of a close friend of the University.

The Morse Communication Research Center

The Communication Research Center of the University is engaged in a program of sponsored research studies, institutes and publications which explore and evaluate many aspects of communications in our society. Essential to these ongoing programs is the simultaneous development of basic resource material. This involves the study of the impact of communications upon many aspects of contemporary life—social structures, political organizations, international relations, education and the formation of individual and group attitudes.

Among the programs undertaken have been annual quantitative studies of the programming content of educational television stations in the United States; a multi-national mass communication study program for representatives of newly emerging nations in cooperation with the United States Department of State; and a national conference on the role and economics of educational television in cooperation with the American Academy of Arts and Sciences, with the support of the United States Department of Health, Education and Welfare.

The Center is primarily underwritten by a major grant from Lester S. and Alfred L. Morse of Boston.

The Sarah and Gersh Lemberg Nursery School

The Lemberg Laboratory-Nursery School was established, as a unit of the Psychology department, in the fall of 1961 through the generosity of Samuel and Lucille Lemberg. Both indoor and outdoor facilities and equipment accommodate some 30 youngsters. Brandeis students enrolled in the education sequence, and students from Tufts University and Wheelock College, serve as practice teachers.

Rosenstiel Biochemistry Program

The graduate and research program in biochemistry is supported by a grant from the Dorothy H. and Lewis Rosenstiel Foundation made "in support of research in the natural sciences with primary emphasis in biochemistry."

The Rosenstiel Biochemistry Program, established in 1957, includes more than 70 graduate and postgraduate research fellows. Among the agencies co-operating in sponsoring research are the National Science Foundation, National Institutes of Health, Office of Naval Research, American Cancer Society, Atomic Energy Commission, the Eli Lilly Company, Howard Hughes Foundation, Rockefeller Foundation, National Dental Institute, and the Damon Runyon Memorial Fund.

Professorships and Lectureships

Jacob Ziskind Professorships

To implement its philosophy of education, the University brings to the campus distinguished academic figures from sister universities both in the United States and abroad who serve as Ziskind Visiting Professors. This program, made possible by the Jacob Ziskind Endowment Fund, enables the University to supplement its regular teaching staff with the presence of academicians drawn from other major streams of educational thought. Inclusion of distinguished foreign academicians serves to challenge and stimulate faculty and students with the introduction of new concepts and new educational viewpoints, thus strengthening the entire educational process.

Harry B. Helmsley Lecture Series

Established to reduce barriers that separate different races, creeds and nationalities, this annual public lecture series has, since its inauguration, featured leading philosophers, educators, government officials and religious leaders in discussions and seminars that relate to intergroup understanding.

The Martin Weiner Distinguished Lectureships

The income from this endowment fund permits the designation of several Weiner Distinguished Lecturers each year. Lecturers receiving these appointments are selected not only from the academic world, but also include figures drawn from the fields of religion, government, international affairs, letters, science, and the business world. The Weiner Distinguished Lecturers enrich the University's curriculum by participating in regular academic seminars and symposia and, in addition, University convocations and public events.

Stephen S. Wise Memorial Lecture

This annual lecture was established by the late Nathan Straus to bring to the University each year a distinguished representative of the liberalism that was basic to the outlook of Dr. Wise.

Abba Eban Lectureship

Also through the generosity of Nathan Straus this endowment permits an annual lecture by a statesman or scholar on some phase of Middle Eastern affairs.

George and Charlotte Fine Endowment Fund

Created to supplement chamber music programs given under the auspices and direction of the Department of Music, the Fine Endowment Fund makes possible the engaging of visiting artists to perform with members of the Brandeis faculty.

Special Academic Programs

Rogoff Foundation Trust

The Rogoff Foundation Trust, a major gift established by the trustees of the Rogoff Foundation Inc., provides support for scholarships, fellowships, study or research in the pre-medical or medical sciences, or related life sciences.

Jewish Historical Society

In the established pattern of learned groups which elect to locate at colleges and universities, the Jewish Historical Society is housed on the campus as a separate and autonomous organization with no legal ties to Brandeis. It provides, however, a focus for scholarly research, symposia, and a common meeting ground for interested undergraduate and graduate students, international figures and for the work carried forth at Greater Boston's many libraries, museums, colleges and universities; thus enriching both Brandeis and the Society. Its site near both the University library and its Judaic center was made available by Brandeis. The building funds were provided by the late Lee M. Friedman, a former president of the Society, attorney and Boston resident.

"In honoring, we are honored."



Lowell Institute Cooperative Broadcasting Council

Brandeis University is a member of the Lowell Institute Cooperative Broadcasting Council, which sponsors the educational radio station WGBH-FM and Boston's educational TV station WGBH-TV, Channel 2. Brandeis, along with Boston College, the Boston Symphony Orchestra, Boston University, Harvard University, Lowell Institute, MIT, the Museum of Fine Arts, the New England Conservatory of Music, Northeastern University, Museum of Science, Simmons College, Yale University and Tufts University, makes its teaching facilities available for use by WGBH-FM and its television affiliate, WGBH-TV. One of the significant programs of the University's educational broadcasting is "The Prospects of Mankind," organized by the late Mrs. Eleanor Roosevelt, which appeared on both educational and commercial TV stations in the United States and abroad. This program was sponsored by the National Educational Television Center and was produced by WGBH-TV in cooperation with Brandeis University.

Peace Corps Training Program

Under contracts with the United States Peace Corps, Brandeis University has served for several years as a training center for Peace Corps volunteers. Training on the Brandeis campus has included preparation for work in areas of public health, community development, university education and secondary schools. In cooperation with Educational Services Inc., and several other curriculum development groups in mathematics and science, the training program has attempted to develop new designs for teacher training and educational development in Columbia.

Edith Barbara Laurie Theater Arts Trust Fund

Established by Mr. and Mrs. Irving Laurie in memory of their daughter, the Edith Barbara Laurie Theater Arts Trust Fund aids in the support of the University's respected theater arts program. The funds provided in this gift avail the development and strengthening of the theater arts curriculum and its frequent stage presentations.

Living Biographies

The techniques of modern electronics, the documentary and the perceptive historian have been combined in *Living Biographies*, an imaginative approach to recording the memoirs of intellectual and other public personages who influence the thought and events of their times. The program is underwritten by Samuel C. Dretzin of New York, a Fellow of the University. *Living Biographies* are video-taped and filmed interviews that serve as historic documents for advanced scholars and undergraduates. The program seeks its subjects everywhere in the world and many notable

Americans in all facets of public life, the professions, business, arts, sciences and education are participating in the interview programs.

Brandeis University Creative Arts Awards

The establishment of the Brandeis University Creative Arts Awards was announced by the University during 1956. Awards are presented annually in the areas of Theatre Arts, Music, Poetry or Fiction and Painting or Sculpture. In each of these fields of the arts, two types of awards are bestowed. Achievement medals are conferred upon successful artists for outstanding accomplishments during the year; and grants-in-aid are awarded to young talented persons, in recognition of their creative ability and encouragement for future study and training. Special juries are appointed annually in each of the fields to judge the competition. Winners of the 1966 Awards were:

Fiction: MEDAL, Eudora Welty; CITATION, John Barth;

Music: MEDAL, Stefan Wolpe; CITATION, Mario Davidovsky;

Sculpture: MEDAL, Isamu Noguchi; CITATION, Richard Stankiewicz;

Theater: MEDAL, Eva Le Gallienne; CITATION, Alvin Epstein, and Notable Achievement, Meyer Schapiro.

Office of Adult Education

To provide adults with the opportunity to pursue courses of instruction in areas of particular interest to them, the Office of Adult Education sponsors daytime seminars, and evening and Sunday-morning lecture courses, all directed by members of the Brandeis faculty, and all consistent with the quality of Brandeis academic offerings. In addition, the office plans and presents a variety of special public lecture programs throughout the academic year.

Summer Institutes for Adults

The Summer Institutes for Adults seek to broaden the University's academic scope by offering a unique residence program to adults from all sections of the country. Participants may spend either one or two weeks of intensive, uninterrupted study, directed by Brandeis faculty members and supplemented by guest lecturers, on topics broadly concerned with the problems and trends of contemporary civilization.

Themis House

Through the generosity of Mr. and Mrs. Boice Gross of San Francisco, Brandeis has acquired the use of a large estate—within a few minutes drive of the campus—consisting of nine acres of land and an attractive English Tudor mansion where it is possible to house, feed and accommodate 30-40



The Faculty Center

persons. "Themis House" is the setting for significant academic institutes, conferences and training programs sponsored by the University. In exceptional instances, it is made available to cooperating educational or civic agencies.

The Computer Center

Established through an initial grant from the National Science Foundation, the University's computer center employs an IBM 1620 machine in work supporting research in the social, life and physical sciences and for other scholarly purposes. Plans are presently underway for substantial expansion of equipment and facilities. Under active consideration is installation of a major computer; a modern equivalent of the IBM 7094 which has been the principal unit in the laboratories of many universities. The enlarged Computer Center would be housed in a new building to be constructed on campus.

General Description

Brandeis University, on the southwest outskirts of Waltham, Massachusetts, is ten miles west of Boston, adjacent to Wellesley and near historic Lexington and Concord.

From the eastern Charles River boundary, University grounds sweep upward to New England's famed Boston Rock, where Governor Winthrop and his Massachusetts Colony explorers first surveyed the region that is today Greater Boston.

By automobile, the campus may be reached as follows: *From the south and west* take Exit 14 of the Massachusetts Turnpike and follow signs to Route 128 North, then Exit 51, left turn at end of exit ramp and follow signs to Brandeis. *From the north:* Route 128 south to Exit 51, then follow signs. *From Boston:* Massachusetts Turnpike Extension to Exit 15, follow signs towards Route 30 and Weston, right turn at Route 30, left turn at traffic light; or, follow Commonwealth Avenue (Route 30), until the intersection just west of the Route 128 overpass; follow signs to Brandeis.

By public transportation: The campus is adjacent to the Roberts Station of the Boston and Maine Railroad (West Concord Line), from which trains run on a frequent schedule to and from downtown Boston (North Station) and Cambridge. Rapid Transit facilities terminate at the Riverside Station of the Massachusetts Bay Transportation Authority (MBTA), 3 miles from campus. Public bus and taxi service operate between Riverside and Brandeis.





Center for the University's Administrative Offices

Long distance bus travellers will find that it is much easier to alight at Riverside rather than Park Square, Boston. All Trailways and Greyhound through and express buses stop there. Train travellers from the South should de-train at Boston, but train travellers from the west should get off at Newtonville, a 20-minute ride from campus on the Roberts bus. From Logan Airport, the easiest route is by taxi to North Station and from there to the Roberts stop (check train schedule first). Rapid Transit is also available from Logan to North Station.

Academic and Administrative Buildings

Abelson Physics Building

Completed in 1965, the Abelson Physics Building houses teaching and research laboratories of the Physics Department. It also includes a major physics lecture and demonstration hall.

Administration Center

Overlooking the main entrance to the campus, the Brandeis University Administration Center houses the offices of the president, deans, student administration, university administration and the National Women's Committee. Conference room facilities serve the Board of Trustees, faculty and administrative staff. The Center comprises Bernstein-Marcus Administration Center, Gryzmish Academic Center and the Julius and Matilda Irving Presidential Enclave.

Bass Physics Building

A unit of the newly completed Science Quadrangle, the Bass Physics Building includes research facilities for the Physics Department as well as departmental offices.

Bassine Biology Center

The newly opened Bassine Biology Center houses all of the research activities of the Biology Department. It includes environmental growth chambers and greenhouses in addition to laboratories, laboratory support areas, preparation rooms, and seminar facilities for the use of Biology faculty and research personnel.

Brown Social Science Center

Adjacent to the library, the Brown Social Science Center includes three structures.

The central building houses the Sociology, Anthropology, Psychology and Economics Departments. It contains classrooms, seminar rooms, faculty offices, laboratories and a small anthropology museum. Glass walls overlook an attractively landscaped quadrangle which the Social Science Center encloses.

Schwartz Hall houses a 300-seat lecture auditorium, classrooms and a spacious lounge. Millions of viewers across the nation have watched television programs recorded in the main auditorium, specially equipped for use as a television studio. The lounge contains a permanent exhibit of Oceanic Art and Ethnographic objects donated to the University by Mrs. Helen S. Slosberg.

Lemberg Hall is the home of the Lemberg Laboratory-Nursery School, operated by the Department of Psychology. Classrooms with specially constructed walls of one-way glass enable students to observe youngsters in the nursery school and to record their development from the observation room. Lemberg Hall also houses the Psychological Counseling Center.

Brown Terrarium

Brown Terrarium, a completely equipped experimental greenhouse, located between the Faculty Center and Sydeman Hall, provides facilities for botanical research.

Goldman-Schwartz Art Studios





Gerstenzang Science Quadrangle

Harry Edison Chemistry Building

A new center for research in Chemistry, completed in 1965, the Harry Edison Chemistry Building includes laboratories and research offices for faculty, postdoctoral research fellows and other research personnel of the Chemistry Department.

Faculty Center

On the south campus is the Faculty Center, containing club facilities, lounges, the faculty dining room, a private dining room for faculty meetings, and apartments for visiting faculty and lecturers.

Ford Hall

Near the central campus, Ford Hall contains classrooms, laboratories, faculty offices and Seifer Hall, an auditorium seating 500, which is used for lectures, large student meetings, and major conferences.

Friedland Research Center

Joined to Kalman Science Center by an overhead corridor of glass and stainless steel, Friedland Research Center provides four stories of modern laboratories which house research in biochemistry and related life sciences.

Gerstenzang Library of Science

The central structure of the newly completed Science Quadrangle is the Gerstenzang Library of Science. This building includes a science library and lecture-demonstration auditoria. The library contains stacks for 250,000 volumes, along with facilities for preparation and use of microfilms, a periodical room and journal reading area, office and other library administration facilities. The lecture-demonstration halls are constructed as amphitheatres, one seating 300 and the other 100. This unit is connected to all other buildings in the University's Science Complex.

Goldfarb Library Building

Near the center of the campus, Goldfarb Library Building is a brick, limestone and glass structure with an ultimate capacity of 750,000 volumes. On the periphery of its open stacks are student study carrels and faculty studies. Seminar rooms are provided for those courses requiring intimate and immediate access to library resources in specific research and reference areas. The library also contains audio-visual aids, specialized reading rooms, typing rooms and lounge facilities. Works of art from the University collection are on constant display in the many galleries of the building.

Golding Judaic Center

Overlooking the campus from the northeast corner of the Academic Quadrangle, Golding Judaic Center contains classrooms devoted to the study of the Near East, Judaics and related subjects. Classrooms and faculty offices ring its large, central lecture hall.

Goldman-Schwartz Art Studios

The Goldman-Schwartz Art Studios provide classrooms, faculty offices and sculpture areas for the Department of Fine Arts and studios for faculty, advanced students and artists-in-residence. Its completion marked a major step in fulfilling the master plan for a unified creative arts enclave extending across the southwest campus.

Goldsmith Mathematics Center

Completed in 1965 as a unit of the newly erected Science Quadrangle, the Goldsmith Mathematics Center provides classrooms, seminar rooms, research offices, faculty offices and a mathematics library for the use of the Mathematics Department.

Hayden Science Court

The Charles and J. Willard Hayden Court, comprising several acres in the central campus area, is the site of present and projected science facilities of the University. This area has been set aside as a memorial to two generous benefactors, whose pioneer gift stimulated the extensive scientific programs of the University.

Heller School Facilities

The Florence Heller Building, just completed, houses the administrative, faculty and teaching activities of the Florence Heller Graduate School for Advanced Studies in Social Welfare.

A major research center, the Benjamin Brown Building, provides research offices and work rooms for the multifaceted research programs being conducted by the Heller School.

Kalman Science Center

The University's first structure devoted entirely to science, Kalman Science Center continues to be the key facility in the growth of the University's science facilities. This center contains instructional and research laboratories for the undergraduate School of Science and for the advanced work of the Graduate School of Arts and Sciences.

Kosow Biochemistry Building

A unit of the new Biochemistry Research Center located to the east of the existing Friedland Research Center and joined to the building on all floors, this building provides additional modern laboratories where research in Biochemistry and related life sciences is conducted.

Lecks Chemistry Building

Adjoining the existing Kalman Science Center, the Lecks Chemistry Building provides new modern laboratories and research spaces for the expanding chemistry research program of the University.

Olin-Sang American Civilization Center

On a hillside overlooking the library and Three Chapels Area, the Olin-Sang American Civilization Center provides unique seminar-classroom halls which include display areas for the placement of original manuscripts and source materials relating to the courses offered. Included are the Diplomatic Studies, Human Rights, Lincoln, Presidential, Washington, Judicial, Legislative, Ethnic Studies and Slater Halls. The Shapiro Forum, which is the building's lecture auditorium, is patterned after the United Nations General Assembly hall.

A Lecture in Rose Art Museum



Rabb Graduate Center

A circular lounge, walled in glass, is a unique architectural feature of Rabb Graduate Center. Its main building contains classrooms and offices for the staff of the Graduate School of Arts and Sciences.

Rapaporte Treasure Hall

Adjacent to Goldfarb Library Building, and joined to it by a glass-enclosed lobby, Rapaporte Treasure Hall is the repository for rare books, incunabula and other library treasures. The upper level serves as the main exhibition area and the lower level stores the University's growing collection and includes a specially constructed vault with provision for the protection of these rare items against the ravages of time, temperature, humidity, fire or theft. Special display areas are being built into the Rapaporte Treasure Hall.

Rose Art Museum

Located within the Creative Arts enclave, the Rose Art Museum is the focal point for the University's rapidly burgeoning art collection. On permanent display are portions of the noted ceramic collection of Mr. and Mrs. Edward Rose. Major loan exhibitions are placed on display during the academic year as well as selections from the University's permanent collection. The wishing pool on the lower level is both a pleasant setting for quiet reverie and the objective of coin-tossing students before examinations.

The Spingold Theater Arts Center





Shiffman Humanities Center

Segal Physics Building

A unit of the newly completed science research center, the Segal Physics Building includes research offices for theoretical physicists, laboratories for research in physics, and newly developed research areas for investigations in high energy physics.

Shiffman Humanities Center

Atop a hillside where its glass walls reveal spectacular views of the campus and the country north of Boston, Shiffman Humanities Center employs a new academic concept in educational architecture. Original manuscripts, portraits, and source materials related to courses being offered are displayed in the seminar rooms. The latest in electronic language teaching facilities are employed in the building's language laboratory. Included are the Language and Phonetics, English and American Literature, Classics, Philosophy, Renaissance, Germanic and Asian Studies Halls.

Slosberg Music Center

Recently completed construction doubles the office, classroom and practice room space in Slosberg Music Center at the entrance to campus. It has its own library and a recital hall which seats 250 with carefully designed acoustical treatment. Slosberg Recital Hall is the location for the University's rich program of chamber music concerts and solo performances.

Spingold Theater Arts Center

The Spingold Theater Arts Center is a unique and imaginative concept translated into exciting design. With a theatre auditorium as its hub, the circular Center includes areas for every facet of the teaching and performing arts; workshops, design rooms, costume preparation and storage areas, rehearsal and dressing rooms, a little theater and a dance studio. Spacious areas are equipped as classrooms and offices, and the great lobby has been envisioned for displays of painting, sculpture and other treasures. The Center's location on the southwest campus places it at the hub of Brandeis' creative arts teaching facilities.

Sydeman Hall

This annex to Ford Hall houses laboratories, classrooms and faculty offices.

Ullman Amphitheater

Utilizing a natural bowl below the science buildings, the Amphitheater has a complete stage with full lighting equipment and orchestra pit, classrooms and faculty offices. It is the colorful setting for University convocations and commencements. The University's Academic Communication Program is housed in the Ullman Amphitheater.

Wolfson-Rosensweig Biochemistry Building

A unit of the new Biochemistry Research Center located to the east of the existing Friedland Research Center and joined to that building on all floors, this building provides additional modern laboratories where research in Biochemistry and related life sciences is conducted.

Woodruff Hall

Situated in the center of the campus, this white brick building temporarily houses academic departments of the University.

East Quadrangle Residence Halls



Athletic Facilities

Memphis Tract

A twenty-six acre area on the east edge of the campus, Memphis Tract contains the Shapiro Athletic Center, Marcus Field, Gordon Field and Rieger Tennis Courts.

Gordon Field

One of the nation's most modern tracks rings Gordon Field where the University's track and field squad plays host to teams from throughout the east. The central area provides playing fields for the University's intramural football teams and specialized accommodations for intercollegiate field events.

Marcus Playing Field

Brandeis' international student body has won respect for its soccer prowess on Marcus Playing Field, which also contains the varsity and practice baseball diamonds and a softball diamond.

Shapiro Athletic Center

Throughout the school year the main gymnasium operates day and night with varsity and intramural competition as well as physical education activities. The gymnasium is also used for public lectures, student dances, and major conferences. In addition, classrooms, offices for the physical education faculty, team, and physiotherapy rooms and dressing rooms are included in Shapiro Athletic Center.

Rieger Tennis Courts

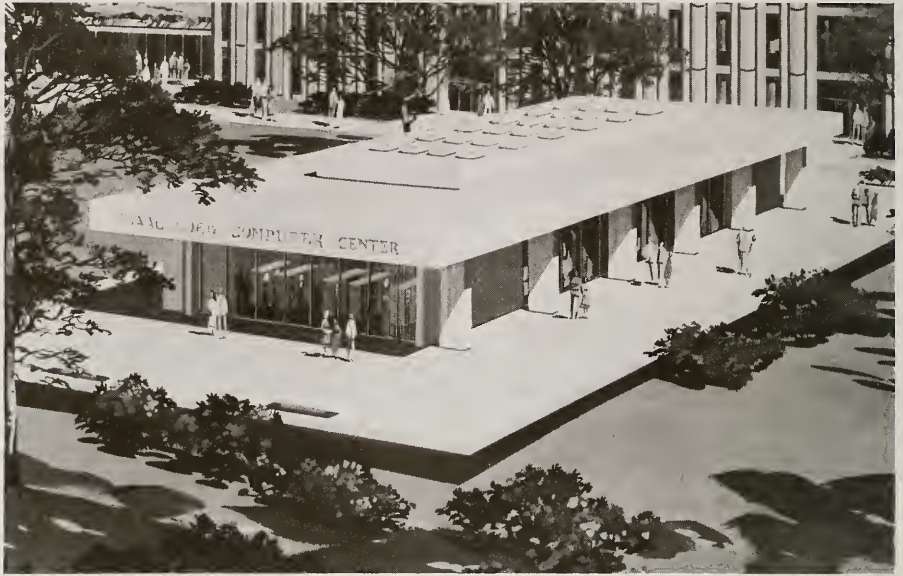
The Rieger Tennis Courts are the scene of informal as well as intramural and intercollegiate tennis competition. They are located to the rear of the Shapiro Athletic Center.

Residence Halls

Campus living accommodations consist predominantly of double rooms, some single rooms and larger quarters. Each residence hall has its own lounge or lounges. Modern laundry and other conveniences are available to all students. Each resident student should bring blankets, lamps and such rugs and decorations as are desired. Arrangements for linen and towel service may be made through the University.

East Quadrangle

The most recently completed residence halls on campus are those in the East Quadrangle. These include Hassenfeld House, Rubenstein Hall,



Isaac Loeb Computer Center

Pomerantz Hall, Krivoff House and Shapiro Brothers Hall. A large central lounge serves all of these buildings, and the entire area is complemented by the Benjamin and Mae Swig Student Center which includes a dining hall and lounge facilities.

Leon Court

Leon Court, a residence area, has four dormitories and a large student center-dining hall grouped around an attractive, wooded quadrangle. Each dormitory unit contains fully equipped student rooms, a lounge and large recreation room. Dormitories in this quadrangle have been designated the Scheffres, Gordon, Cable and Reitman Halls. The student dining hall is Milton and Hattie Kutz Hall.

Massell Quadrangle

Consisting of Shapiro, DeRoy, Renfield and Usen Residence Halls, and the Sherman Student Center, this is a major housing and recreational area. Each unit has functionally equipped rooms with maximum living and closet space. Ground floor lounges overlook the central quadrangle and the walks encircling Anne J. Kane Reflecting Pool.

Ridgewood Quadrangle

Emerman, Fruchtmann, Danciger, Allen and Rosen Residence Halls comprise the University's living areas for students on the south campus. Each hall has two lounges opening on the quadrangle.

The Castle

An imposing structure designed after medieval architecture and completed a decade before Brandeis was founded, the Castle has been remodelled into single, double, and larger rooms for women. Its ground floor houses the University Snack Bar and the student-operated coffee shop, *Cholmondeley's*.

Schwartz Residence Hall

This companion structure to the Castle houses women. Its lounge, a retreat for reading, relaxation and entertainment, is furnished in contemporary style.

Themis House

Special seminars, conferences and symposia are housed at Themis House, located in Weston, Mass., a few minutes from the campus. Thirty to forty participants may be accommodated for food and lodging at this University conference site, made available by Mr. and Mrs. Boice Gross.

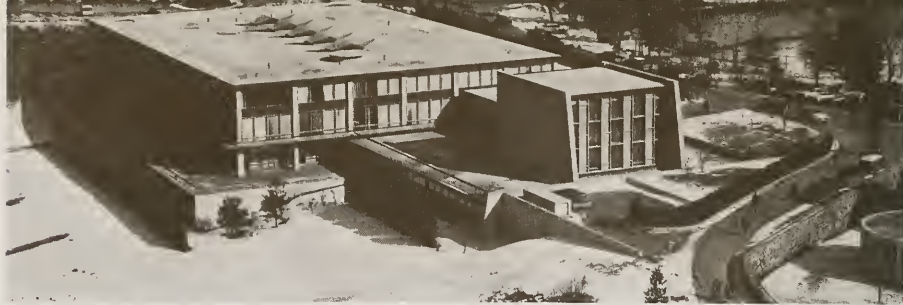
Student Centers

Sherman Student Center

The glass walls of Sherman Student Center rise from the ground level to roof, overlooking Massell Quadrangle and the Kane Reflecting Pool. Its ground floor dining hall serves several hundred students daily and is frequently utilized as a banquet hall for major University functions. Along the upper level are located a large lounge, game room and two smaller dining rooms. Bulletin boards of these rooms serve as the major communications center for student activities and the walls frequently are hung with special art exhibits. Dances, parties and meetings often occupy the entire building on busy evenings.

Sherman Student Center





The Goldfarb Library and Rapaport Treasure Hall

Feldberg Lounge

Spacious and comfortable, this glass and brick walled lounge is used for informal discussions, lectures, songfests and conferences and is a favorite meeting place between classes. Works of art by student and professional artists are on constant exhibit.

Kutz Hall

A towering ceiling, attractive furnishings, a site overlooking Greater Boston, make Kutz Hall a versatile and popular student dining hall. Banquets seating 500 are held on its main floor. An outdoor terrace and commodious balcony provide unusual settings for receptions and student social activities. Folding walls under the balcony permit creation of private rooms for dinner meetings of student or faculty groups. The towering north wall of Kutz Hall mirrors the rest of Leon Court in its more than 8000 square feet of glass.

Swig Student Center

The attractively furnished Swig Student Center, in the East Quadrangle, provides dining facilities for 330 students as well as lounge and terrace for student receptions and social activities. It also includes a private dining room for dinner meetings of student groups. The Swig Student Center is connected to the dormitories of the East Quadrangle by an overhead walk.

Mailman Hall

This striking glass, brick and granite structure provides spacious lounges, modern recreational rooms and facilities for the display of painting and sculpture. A recently completed addition to this building includes student publication offices, the campus radio station, offices and meeting rooms for the Student Council and other student organizations. Designs are now being completed for enlarging Mailman Hall and transforming the facility into a University mental health and psychological counseling center.

Usen Commons

Greater Boston spreads out in a panoramic view from the windows of Usen Commons, a circular, conservatory style lounge on the second level of the Castle. Since the earliest days of the University, this lounge has been familiar to Brandeis students as ideal for small dances and social functions.

Dining Halls

University dining halls are located in Kutz Hall, Swig Student Center and Sherman Student Center. A separate kitchen is maintained in Sherman Student Center for those wishing special dietary meals. In addition, light refreshments are provided in the Castle Snack Bar and *Cholmondeley's*.

Stoneman Infirmary

On the forward slope of the campus, near the Castle, the Infirmary houses a first aid treatment room, lounge, out-patient clinic, four consulting suites, and rooms for twenty-four bed patients. A new wing increased patient capacity by fifty percent.

The Three Chapels

Assuming that worship is a matter of mood and spiritual climate, not limited to words or ceremonies, the University's Harlan, Berlin and Bethlehem Chapels serve the Protestant, Jewish and Catholic faiths. A centrally located pulpit serves a large outdoor area where shared functions such as Baccalaureate are celebrated. Student organizations responsible for services are the B'nai B'rith Hillel Foundation, Newman Club and Student Christian Association. Each has its own chaplain.

Maintenance Funds

As the University's physical plant expands, the costs of maintaining buildings and grounds impose increasingly on its general fund resources. However, funds to help meet these costs have been made available through the generosity of individuals and foundations.

Louis D. Beaumont Foundation Fund

The Louis D. Beaumont Foundation of Cleveland, Ohio, has provided funds for general purposes, including building maintenance, since the early years of the University.

Harry Pearlman Endowment Fund

A portion of a major gift to the University by Harry Pearlman of New York, has been directed to building maintenance. The remainder of the gift will go toward construction of a teaching center in the humanities.

David and Irene Schwartz Fund

Under a special grant from David and Irene Schwartz, funds have been provided for a systematic landscaping of the campus to achieve a harmony between the terrain's natural beauty and the building architecture as conceived and executed by some of the nation's noted architectural figures.

Facilities Under Construction

Linsey Sports Center

Now under construction, The Joseph Linsey Sports Center will include an Olympic-size swimming pool, squash courts, fencing room and other athletic teaching facilities. Connected to the athletic center, the sports center will provide facilities for substantial enhancement of the University's physical education and intercollegiate athletic programs.

Student Union

Scheduled for construction in 1966-67 is a Student Union complex which will consolidate student social and recreational facilities in a central location in mid-campus close to major teaching facilities and residence halls. The Student Union complex will consist of a main structure housing such facilities as an assembly and banquet hall, the University bookstore, mail-room, bowling alleys, lounges and food service areas. Other components will house student organizations, student social and recreational areas, alumni offices and student service offices. The main building of the Student Union has been underwritten by Mr. and Mrs. Samuel Lemberg of New York in honor of their daughter and son-in-law, Mr. and Mrs. Nathaniel H. Usdan. Other units have been provided through generous grants from Mr. and Mrs. Joseph Gluck of New York City, Mr. Ben Tobin of Hollywood, Florida; Mrs. H. W. Winer of Brookline, Massachusetts, in memory of her late husband, Mr. Hy Winer; and the Wuliger Family of Medina, Ohio, in memory of their parents, Helen K. and Frank Wuliger.

Linsey Sports Center





Waiting to register during orientation week

New Rabb Graduate Center

The rapid growth of the University's Graduate School of Arts and Sciences has made it necessary to expand the facilities allocated for Graduate School administrative activities and for graduate teaching in the humanities. Under construction is a new Rabb Graduate Center provided by the Rabb Family, together with a grant from the United States Office of Education under the Higher Education Facilities Act. Scheduled for completion in 1967, the facility will provide administrative and faculty offices, seminar and teaching rooms and study space for graduate students.

Projected Facilities

Computer Center

Currently being planned is a Computer Center to provide substantial facilities and equipment. To be located centrally on campus, this Center will employ the most up-to-date equipment for work supporting research in the life, natural and social sciences, humanities and the arts, as well as in meeting administrative needs.

Dormitories

Also being planned are new student dormitories designed to be built in two stages. The first grouping, to be built adjacent to the Massell Quadrangle, will accommodate approximately 200 students. This complex is planned for use in the academic year 1968-69. The second grouping of dormitories, planned for completion in 1969, will be constructed adjacent to the Leon Quadrangle.



The Graduate School of Arts and Sciences



General Information

History and Organization

The Graduate School of Arts and Sciences was formally established in 1953 when the University Board of Trustees authorized graduate study in the Departments of Chemistry, Music, Psychology, and Near Eastern and Judaic Studies. The first Master of Arts degree was conferred in 1954; the first Master of Fine Arts degree, in 1954; and the first Doctor of Philosophy degree in 1957.

The general direction of the Graduate School is vested in a Graduate Council of the Faculty composed of the President and the Dean of Faculty, ex officio; the Dean of the Graduate School; and one representative, usually the chairman, of each of the several University departments and committees offering graduate instruction. The members of the Graduate Council are appointed by the President on the recommendation of the Dean of the Graduate School. The functions of the Graduate Council, exercised in consonance with University policy, are to determine requirements for admission; to provide programs of study and examinations; to establish and maintain requirements for graduate degrees; to approve candidacy for degrees; to make recommendations for degrees; to make recommendations for new areas of graduate study; to lay down such regulations as may be considered necessary or expedient for governing the Graduate School; and to exercise a general supervision over its affairs. The Dean of the Graduate School is the chairman of the Graduate Council and the chief executive officer of the Graduate School.

Objectives

The underlying ideal of the Graduate School is to assemble a community of scholars, scientists and artists, in whose company the student-scholar can pursue studies and research as an apprentice. This objective is to be at-

tained by individualizing programs of study, restricting the number of students accepted, maintaining continual contact between students and faculty, and fostering the intellectual potential of each student.

Degrees will be granted on the evidence of intellectual growth and development, rather than solely on the basis of formal course credits. Fulfillment of the minimum requirements set forth below cannot, therefore, be regarded as the sole requisite for degrees.

Areas of Graduate Study

During the academic year 1965-66, graduate programs will be offered in the following areas:

- | | |
|-------------------------------------|-------------------------------------|
| 1. Anthropology | 10. Mathematics |
| 2. Biochemistry | 11. Mediterranean Studies |
| 3. Biology | 12. Music |
| 4. Biophysics | 13. Near Eastern and Judaic Studies |
| 5. Chemistry | 14. Philosophy |
| 6. Contemporary Jewish Studies | 15. Physics and Astrophysics |
| 7. English and American Literature | 16. Politics |
| 8. History of American Civilization | 17. Psychology |
| 9. History of Ideas | 18. Sociology |

Details of the programs and courses offered in these areas are given below. In succeeding years, the graduate program will be extended to cover other areas.

Graduate study in Social Welfare is offered by the Florence Heller Graduate School for Advanced Studies in Social Welfare. For information concerning this area of study, see the catalog of that school.

Graduate School Office

The Graduate School office is located in the Rabb Graduate Center, room 104 and rooms 107 to 111. The office is open Monday through Friday from 9 A.M. to 5 P.M. All requests for information, catalogs and application forms should be addressed to the Dean of the Graduate School of Arts and Sciences, Brandeis University, Waltham, Massachusetts 02154.

Housing

The University does not have on-campus housing for graduate students. The Off-Campus Housing Bureau, located in Gryzmish Academic Center, attempts to serve as a clearinghouse for rooms, apartments and houses available in Waltham and near-by Greater Boston communities.

Dining Facilities

Graduate students may sign for the twenty-one meal contract or the fifteen-meal contract in either Kutz Hall or the Sherman Student Center Dining Hall. Arrangements must be made with the Steward's Office. A separate kitchen is maintained in the Sherman Student Center for those wishing kosher meals. Individual meals may be purchased at either dining hall. Light snacks are served at the Castle Snack Bar.

Office of Career Planning

The Office of Career Planning assists undergraduates, seniors, graduate students and alumni with their graduate and career plans. Information on graduate and professional school fellowships and scholarships; graduate and professional catalogs; lists of on- and off-campus part-time employment; lists of summer employment, and individual listings of permanent positions including academic and research openings; civil service opportunities and work and travel opportunities abroad are on file for the use of all students and alumni.

The Office of Career Planning will assist any graduate student who seriously needs and desires part-time work. Students seeking part-time employment should register with this office. New students will not be assigned to part-time positions prior to arrival on campus. Students are cautioned against working more than eight to ten hours a week.

No graduate student who receives financial assistance from the University may accept part-time employment without the prior approval of the chairman of his department and the Dean of the Graduate School.

The on-campus part-time student rate of pay is from \$1.20 to \$1.70 an hour for graduate students depending upon skill, and upon the amount of time worked for a department. Students can expect to earn from \$200 to \$500 in the course of a year. Temporary jobs are often available on a day-to-day basis.

The University Health Office

The Medical Director and his staff are responsible for the physical well-being of students, including the establishment and enforcement of infirmary regulations. Payment of the required medical fee entitles students to treatment available in the David Stoneman Infirmary and to participate in the Student Health Plan.

New students in the College as well as the Graduate Schools are responsible for submission of a health examination report and meeting all requirements of the Health Office. These include a certificate of inoculation against smallpox, evidence of tetanus immunization and, if possible,

complete immunization against poliomyelitis. Since students are not permitted to register until these requirements have been satisfied, it is strongly recommended that reports be submitted at least two months before registration. All new students must report for physical examinations at the beginning of each academic year. This is in addition to the pre-entrance physical examination by the student's family physician or physician of his choice.

The health insurance program helps defray expenses for a period of one year, commencing September 1, 1966, for treatment beyond the scope of the Health Office. A brochure outlining the details of this program is distributed to each student at registration and copies are mailed to parents. Students and parents are urgently requested to read this brochure and keep it for reference. It should be noted here, however, that coverage is not provided for pre-existing conditions, optical and dental services or special drugs.

Within the limitations of the insurance coverage, fees of outside doctors, laboratories, and hospitals will be processed for payment only when consultations, laboratory or x-ray studies or hospitalization have been authorized by the University Health Office in advance on a form provided for this purpose. The University is not responsible for off-campus medical and hospital care sought by students or their parents on their own initiative, or for outside care or consultation which has not previously been authorized by the Health Office. The only exception to this is in case of real emergency, or illnesses or injuries occurring while away from the university, when such prior authorization is not feasible.

Admission

As a general rule only well-qualified men and women who have completed the normal four-year program leading to the Bachelor's degree will be considered for admission to the Graduate School. Graduates of foreign schools and others who have completed the equivalent of a Bachelor's degree program may apply, describing the educational program they have completed.

Testing

Applicants for admission to the graduate areas in biochemistry, biophysics, chemistry, history of American civilization and psychology are required to take the Graduate Record Examination, including the aptitude test portion, and preferably one advanced test in a field related to the proposed area of graduate study. Applicants for admission to the graduate area in psychology must also take the Miller Analogies Test. All other applicants

for admission are urged to take the Graduate Record Examination. Information concerning the Graduate Record Examination is available from the Educational Testing Service, 200 Nassau Street, Princeton, New Jersey, or 1947 Center Street, Berkeley 4, California.

Foreign students, regardless of graduate area of study, are required to take the Test of English as a Foreign Language (TOEFL) unless English is their first language. This includes comprehensive testing in auditory comprehension, reading comprehension, writing, vocabulary, and grammar. Applications for admission to the test should be made to TOEFL, Educational Testing Service, Princeton, New Jersey, U.S.A. The test is administered at various established centers abroad.

Application

Specific requirements established by each area of study are to be found below. Each applicant should consult these requirements prior to filing an application. A student may apply to only one graduate department or area. One who seeks admission to the Graduate School should write to the Dean of the Graduate School of Arts and Sciences, stating which area of study he or she wishes to pursue. A catalog and appropriate forms will be forwarded to the applicant. The "Application for Admission" and, if needed, the "Application for Financial Aid" should be completed and returned in duplicate as soon as possible. The closing date for receipt of applications for admission is the first business day in March, though exceptions may be made. Applicants requesting financial aid should file as early as possible. Applications for admission for the Spring Term must be filed by December 15. Students are not usually admitted at midyear, and those who do gain admission are not normally eligible for financial aid.

The applicant is required to arrange for forwarding official transcripts, in duplicate, of all undergraduate work and graduate work, if any. In addition, he must have forwarded, on forms provided by the Graduate School, two letters of recommendation, preferably from professors with whom the applicant has studied in the field of his proposed area of study. An applicant who has engaged in graduate study elsewhere should request at least one of the recommendations from a professor with whom he has done graduate work.

Applicants for admission to the Graduate Department of Music in the field of composition and to the graduate Department of English and American Literature must also submit samples of their written work.

All applications for admission must be accompanied by an application fee of \$10.00, payable by check or money order to Brandeis University. No application will be processed until this fee is paid.

Admission Procedure

All applications are considered on a competitive basis. The number of students who are admitted each year in each department is limited so that the Graduate School may operate effectively under its distinctive principles of individualized study and apprenticeship. Consequently, admission may sometimes be denied to qualified persons. The minimum standards of admission merely determine whether the applicant will qualify for a place in the group from which final selections will be made. Selections are based on the applicant's ability to do graduate work of high quality, as shown by the distinction of his previous record, particularly in his proposed area of study; by the confidential letters of recommendation submitted in support of his application; and by his adaptability to the particular graduate programs offered by Brandeis University. In addition, knowledge of foreign languages, relevant practical experience in the field, samples of work, the results of the Graduate Record Examination, and indications of character are considered. In order for the results of the Graduate Record Examination to be considered, the applicant should take the examination no later than January, 1966.

Each application for admission with all supporting records is first examined by the department or committee responsible for the graduate area to which the applicant seeks admittance. The department or committee recommends to the Dean of the Graduate School which applicants should be selected for admission and for financial aid. The Dean, in association with the Faculty Committee on Admissions and Awards, reviews all applications in the light of departmental recommendations, and, on behalf of the Committee on Admissions and Awards, informs each applicant of the results of the competition. Applicants for admission will be notified usually by April 1.

Acceptance

A student who has been accepted for admission to the Graduate School will be notified by a letter specifying the date by which he must accept the offer of admission and awards, if any. If a student selected for admission indicates that he does not intend to accept the offer, or if he fails to reply by the date specified, his admission offer becomes void and another applicant may be accepted in his place.

Brandeis University subscribes to the "Resolution Regarding Scholars, Fellows, and Graduate Assistants" of the Association of Graduate Schools of North America. The resolution states:

"In every case in which a graduate assistantship, scholarship, or fellowship for the next academic year is offered to an actual or prospective

graduate student, the student, if he indicates his acceptance before April 15, will have complete freedom through April 15 to submit in writing a resignation of his appointment in order to accept another graduate assistantship, scholarship, or fellowship. However, an acceptance given or left in force after April 15 commits him not to accept another appointment without first obtaining formal release for the purpose."

Students who are accepted must provide the Graduate School Office with an official final transcript of their undergraduate record and of any graduate work in progress at the time of acceptance. In addition, students who are accepted are required to complete and return a Medical Questionnaire and a health insurance form, which will be sent with notification of acceptance. All acceptances are conditioned on subsequent approval by the University Health Office. All persons admitted to the Graduate School must give evidence of their physical and psychological capacity to carry on their studies.

If, after having been admitted, a student cannot attend, he should notify the Dean of the Graduate School as soon as possible. If such a student wishes to be admitted for a subsequent academic year, he must request reactivation of his application at the appropriate time, and bring it up to date.

An applicant who has been denied admission may reapply in a later year, particularly if he has had further training which would strengthen his application or if he can submit additional letters of recommendation.

Admission to the Graduate School does not imply that the successful applicant has been accepted as a candidate for a graduate degree. Superior performance at Brandeis University is essential. Admission to candidacy for the M.A. or M.F.A. is granted by the graduate department or committee administering the program of study. Admission to candidacy for the Ph.D. is granted by the Graduate Council on the recommendation of the Department or Committee administering the program of study.

Readmission

Admission is valid only for one academic year. A student's record is reviewed annually, and he may be denied readmission. Students completing the requirements for the M.A. or M.F.A., and students who already hold a Master's degree but who have not yet been admitted to candidacy for the doctorate, must make formal application for readmission by the first business day in April of each year if not requesting financial aid, or by the first business day in March if requesting financial aid. The application for readmission must be filed with the Graduate School Office.

Foreign Students

Graduates of foreign colleges and universities who have completed the equivalent of an American bachelor's degree may apply for admission and for financial assistance. Foreign applicants should enclose with the official "Application for Admission" original documents or official certified copies indicating the nature and scope of their formal educational background.

A student whose native language is not English should not apply unless he can read, write, and understand English with enough competence to pursue a regular program of graduate study at an American university. Evidence of such competency is required through submission to the Graduate School the results of the TOEFL examination. Nor should a foreign student apply for admission unless he has the financial ability to support himself in the United States. For this purpose the sum of at least \$2,500 will be necessary for the nine-month academic year, exclusive of expenses for travel, summer, or vacation.

Of the large number of foreign applicants who apply annually, financial assistance is available to only a few of the outstanding. Scholarships cover only tuition costs. Fellowships and teaching assistantships are helpful in meeting subsistence expenses. The total assistance offered, however, is usually sufficient to cover only a portion of the student's total expenses. A foreign applicant who has not had training in an American institution of higher learning will be at a disadvantage in competing for scholarships and fellowships. Teaching assistantships are rarely awarded to foreign applicants in their first year of graduate study.

A limited number of foreign applicants are accepted through the Wien International Fellowship Program, which provides financial assistance to highly qualified graduate degree candidates. A complete description of this program may be found on page 14 of this catalog.

It would be wise for foreign applicants who are not in the United States at the time of application to seek the assistance of the Institute of International Education. The Institute has access to funds for the aid of foreign students and helps place them at suitable universities. For information write to the Institute of International Education, 809 United Nations Plaza, New York, New York 10017. Students from Great Britain may apply through the English Speaking Union, whose central office is in London. The Fellowship Commission of the United States Information Service and the local American Embassy have information on travel grants for foreign students. In any case, foreign applicants are advised to apply to several American universities.

An application fee of \$10.00 should accompany the foreign student's "Application for Admission." No application will be processed until the application fee is paid. A foreign student who is registering in the Graduate School for the first time or reregistering after a leave of absence must see the adviser for foreign students before registration and must present to her for inspection his passport and visa. The adviser will assist in all matters connected with U.S. immigration regulations.

The office of the adviser for foreign students is located in Gryzmish Academic Center, Room 106.

A foreign student who enters the United States on a student "F" visa is expected to register at the college or university which admitted him and is the destination for which his visa was obtained. Should a foreign student be admitted to the Graduate School of Brandeis University from another American university, he must visit the District Immigration Office in the area of the school from which he is transferring and present a letter from that school stating that he has been successfully pursuing a full course of study and that there is no objection to the transfer. He must also present his acceptance letter from the Graduate School of Brandeis University.

Employment may be granted to an "F" visa student during the school year in three situations: (1) if he has been granted permission for on-campus employment as a condition of admission, as indicated on the original Form I 20A provided by the University; (2) if his employment consists of practical training in his field of study; or (3) if his financial situation has changed since his admission, and he has been granted permission for employment, with the approval of the University, by the Immigration and Naturalization Service. Each year the Immigration and Naturalization Service delegates to the University the privilege of granting permission, on the basis of economic necessity, to "F" visa students for employment during the summer vacations. Permission for employment cannot be granted to Exchange Visitor "J" visa students, unless the employment is practical training that is part of the program of instruction.



Academic Regulations

Registration

Every resident student must register in person at the beginning of each semester, whether the student is attending regular courses of study, carrying on research or independent reading, writing a thesis or dissertation, or utilizing any academic service or facility of the University. Students who have completed their residence requirements and who wish to utilize any academic service or facility of the University must also register.

There is a charge of \$10.00 if registration is not completed at the time specified in the Academic Calendar for the Graduate School.

Registration consists of payment of all fees for the semester and filing a program card and other required forms duly completed.

Program of Study

Before filing his Program Card, the student should plan his program of study in consultation with the chairman of his department. All courses for which the student registers for credit must be listed on the Program Card.

Audited courses must also be listed, noted as "audit," and the Program Card must be signed by instructors of such courses.

A graduate student may not normally register for an undergraduate course (numbered below 100) in his own area for degree or residence credit unless he secures the signed approval of both the instructor of that course and his department chairman. The student must then petition the Dean of the Graduate School for the desired credit, and must receive his approval before or at the time of registration. Credit will not be given for undergraduate courses taken to make up deficiencies in the student's preparation for a graduate program of studies, nor will credit ordinarily be given for language courses that are not part of the student's program of studies. Under no circumstances may a student receive credit toward completion of degree or residence requirements for courses undertaken to aid in the completion of language requirements. Scholarship students may not apply their scholarships toward the remission of tuition for undergraduate courses taken to remedy deficiencies. The completed Program Card must be signed by the department chairman before submission at registration, and the department chairman will certify whether the program of study is full-time or part-time and, if part-time, whether one-quarter, one-half, or three-quarters time. Full-year courses must be re-entered on the program card at Spring Registration, and ordinarily they may not be dropped at midyear. A student wishing to drop a full-year course at midyear must petition the Dean of the Graduate

School for permission, after receiving the written approval of the instructor of the course and of the chairman of his department. No student may register at midyear for a full-year course without the written approval of the instructor of the course and his department chairman.

Auditing Courses

The privilege of auditing courses without fee is extended to all regularly enrolled graduate students except those classified as special students. Special students may audit courses by paying for them at the same rate as those taken for credit. No course may be audited without the permission of the instructor. An auditor is merely a listener. He may not participate in any class work, nor take examinations, nor receive evaluation from the instructor; no credit is granted for an audited course.

Change of Program

A registered student who wishes to drop or add a course or alter his program of study must obtain a Course Change Card from the Graduate School Office and return it when properly filled out. Credit will not otherwise be given for the courses changed. In addition, a student must change his program within the specified time limits stated in the current academic calendar, or he will be subject to a \$10.00 fine.

Students may not drop courses after December 1 in the first term or after April 1 in the second term of the academic year.

Registration in Terms of Time

An advanced student—one who has completed one full year of residence, either by graduate work at Brandeis or by receiving credit for graduate work done elsewhere—may register in terms of time, subject to the signed approval of his department chairman. His Program Card must indicate that he is registering full-time or a specific fraction thereof (one-quarter, one-half, or three-quarters).

Registration in terms of time is a device that helps to individualize programs of study and permits increased freedom for independent research for the advanced graduate student. Registration in terms of time frees the student to pursue a program of study that partially accepts or bypasses altogether the system of formal courses, although a student registering in terms of time will usually register for an advanced research or dissertation course. His time will be spent in such research and reading as will be most beneficial to his development as a scholar.

Absence from Examinations

A student who is absent from a midyear or final examination without an accepted excuse will receive a failing grade for that examination. No student may be excused from such examination unless for emergency or medical reasons, nor may he be excused if he was able to notify the instructor in advance and failed to do so. Cases involving absence are referred to the chairman of the department. The department will decide whether a make-up examination shall be allowed, and will notify the Dean of the Graduate School. The examination must be taken within six weeks of the opening of the next semester.

Grades and Course Standards

Graduate students are expected to maintain records of distinction in all courses. Letter grades will be used in all courses in which grading is possible. In thesis or research courses, if a letter grade cannot be given at the end of every semester or academic year, "Credit" or "No Credit" may be used. "No Credit" and any letter grade below "B-minus" are unsatisfactory grades in the Graduate School. A course in which the student receives an unsatisfactory grade will not be counted toward graduate credit. Courses graded "Non-credit" are those which carry no credit but are required of the student. At the end of each academic year the Graduate School will issue to all registered students a report of their grades and of degree requirements that have been satisfactorily completed.

Incompletes

A student who has not completed the research or written work for any course may receive a grade of "Inc." (incomplete) or a grade of failure at the discretion of the instructor in the course. A student who receives a grade of "Inc." must satisfactorily complete the work of the course in which the "Inc." was given in order to receive credit for the course and a letter grade. An "Inc.," unless given by reason of the student's failure to attend a final examination, must be made up no later than the end of the term following the term in which it was received. When failure to take a final examination has resulted in an "Inc.," resolution of that grade to a letter grade must occur within six weeks of the beginning of the next academic semester or the potential course credit will be lost. If a student requires additional time to settle an incomplete grade, he may petition the Dean of the Graduate School for an extension of time, provided the petition is signed by the instructor of the course and by the department chairman. Such a petition must be filed prior to the expiration of the deadline for making up an incomplete.

Credit for Work Done Elsewhere

Graduate work taken elsewhere may not be counted toward fulfillment of the residence requirement at Brandeis University for the degree of Master of Arts, although a department may accept work taken elsewhere in partial fulfillment of specific course requirements for the degree. Not more than one semester of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Master of Fine Arts. Not more than one year of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Doctor of Philosophy.

A student admitted to a Ph.D. program at Brandeis University who has done graduate work elsewhere may file an application to have his work at that institution counted toward fulfillment of residence requirements. However, language requirements, qualifying and comprehensive examinations, the dissertation and the final oral examination, and other such requirements, must be fulfilled while enrolled at Brandeis.

To be eligible to receive credit toward fulfillment of residence requirements for work taken elsewhere, a student must complete at least one semester's residence at Brandeis as a full-time student. He may then file an "Application for Credit for Graduate Work Done Elsewhere." The completed application should be submitted to the Graduate School Office, which will advise the student of the action taken on his application. An applicant will not necessarily be given the credit he requests. Each department reserves the right to require of any student work in excess of its minimum standards to assure thorough mastery of his area of study. In any case, every candidate for the Ph.D. degree must complete at least one year in residence at Brandeis as a full-time student, or the equivalent thereof in part-time study.

Residence Requirements

Residence requirements for all graduate degrees are computed by determining the amount of registration for credit and the tuition charges. Part-time students and teaching assistants pursuing part-time programs of study for credit complete their residence requirement when their fractional programs (one-quarter, one-half, three-quarters) total the amount required of a full-time student for any given degree.

Master of Arts

The minimum residence requirement for all students is one academic year on a full-time graduate credit program at the full tuition rate, or the equivalent thereof in part-time study.

Master of Fine Arts

The minimum residence requirement for all students is three academic semesters on a full-time graduate credit program for each semester, at the full tuition rate for each semester, or the equivalent thereof in part-time study.

Doctor of Philosophy

The minimum residence requirement for all students is two academic years on a full-time graduate credit program for each year, at the full-tuition rate for each year, or the equivalent thereof in part-time study.

Full-Time Resident Students

A full-time student is one who devotes his entire time, during the course of the academic year, to a program of graduate work at Brandeis University, to the exclusion of any occupation or employment. In exceptional cases, however, a student may accept outside employment with the approval of his department chairman.

A full-time program may include a combination of teaching and research assistance, work leading to the fulfillment of degree requirements, such as preparation for qualifying, comprehensive, and final examinations, or supervised reading and research, or the writing of M.A. theses and Ph.D. dissertations, as well as regular course work.

A full-time resident student may take as many courses for credit in any semester as are approved by his department chairman, but no student may receive credit for, nor be charged for, more than a full-time program in any semester. Thus the minimum residence requirement for any degree may not be satisfied by an accelerated program of study nor by payment of more than the full-time tuition rate.

Ph.D. candidates and students for whom the M.A. and M.F.A. degrees are terminal degrees may continue as full-time students on completion of their residence requirements by registering at the post-residence fee (see p. 62).

Part-Time Resident Students

A part-time student is one who devotes less than his entire time to a program of graduate work at Brandeis University. He may register for a credit program of one-quarter, one-half, or three-quarters time. A part-time student may engage in outside employment with the permission of his department chairman, who may restrict the time permitted for such employment.

Students wishing to pursue part-time resident study leading to a gradu-

ate degree must explain in writing, at the time they seek admission, why full-time study is not possible. An enrolled student receiving financial aid from the University, who wishes to change his status from a full-time to a part-time resident, must file with the Graduate School Office an explanation of why full-time study is no longer possible.

Post-Resident Students

A graduate student who has completed residence requirements and who registers in order to utilize academic services or University facilities while completing degree requirements is a post-resident student.

Special Students

On occasion, properly qualified persons who wish to audit or to take courses without working for a degree will be admitted. Special students are not eligible for University loans, scholarships, fellowships, teaching or research assistantships, nor will they be considered for resident counsellorships. A special student who later wishes to change his status to that of a part-time or full-time student working for a degree must apply for admission as a resident student. He must also file a special petition if he wishes credit to be accepted for any courses taken at Brandeis as a special student. Credit for such course work may be granted in exceptional cases.

Leave of Absence

Students who have not completed their residence requirements may petition for leave of absence. The petition must have the approval of both the chairman of the department and the Dean of the Graduate School. Leave of absence up to one year will normally be granted to students in good academic standing who present compelling personal reasons or need to do work off campus in connection with their graduate studies.

If for any reason a student must extend a leave of absence, he must request such extension in writing before his leave of absence expires. Failure to do so will result in being automatically dropped from the Graduate School roster.

Continuation

A graduate student who has completed residence requirements and who is not registered during the period in which he is completing degree requirements is considered a Continuation Student. A student in this category is not eligible for a leave of absence.

Withdrawal

A student who wishes to withdraw from the Graduate School at any time before the end of the academic year must give immediate written notice to his department chairman and to the Dean of the Graduate School. Failure to comply with this procedure for withdrawing may subject the student to dishonorable discharge, refusal of readmission, cancellation of the privilege of securing an official transcript of his record, and, in the case of a student withdrawing within 30 days of the beginning of classes, loss of eligibility for partial refund of tuition. Such a student must pay tuition for the full semester. Permission to withdraw will not be granted if the student has not discharged all financial indebtedness to the University or has not made arrangements for subsequent payment to the satisfaction of the Office of University Finance.

Exclusion, Dismissal or Expulsion

The University reserves the right to dismiss or exclude at any time any student whose character, conduct, academic standing or financial indebtedness it regards as undesirable, and without assigning any further reason therefor; neither the University nor any of its Trustees or officers shall be under any liability whatsoever for its disciplinary action, exclusion or dismissal.

The University also reserves the right to revoke, cancel or reduce at any time any financial or honorific award made to any graduate student, for character, conduct, academic standing or financial indebtedness regarded by the University as undesirable, and without assigning any further reason therefor; neither the University nor any of its Trustees or officers shall be under any liability whatsoever for cancelling, revoking or reducing any award.

General Degree Requirements

The following general requirements apply to the awarding of graduate degrees in all areas of study. For the specific requirements of each area of study, students should consult the appropriate section of this catalog.

Master of Arts

In order to qualify for a Master's degree, the student must complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study. Each course meeting three hours per week grants three credits per semester. Certain departments may at their option require more than

twenty-four hours of graduate study. All departments offering Master's programs require that the candidate demonstrate a reading knowledge of at least one foreign language and pass satisfactorily a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. Where a thesis is required for the Master's degree, two copies must be submitted to the department chairman in final form no later than January 7 for a February degree or May 1 for a June degree.

The Master's degree must be earned within four years from the inception of graduate study at Brandeis University.

Master of Fine Arts

In order to qualify for the degree of Master of Fine Arts in Music, the candidate must complete with distinction thirty-six semester hours of work at the graduate level, and must meet the language and other requirements for the degree outlined on pages 127-130. Two copies of the thesis must be submitted to the department chairman in final form no later than January 7 for a February degree or May 1 for a June degree.

The Master of Fine Arts degree must be earned within five years from the inception of graduate study at Brandeis University.

Doctor of Philosophy

In order to qualify for the degree of Doctor of Philosophy, a student must ordinarily complete a minimum of three years of graduate study, including two full years of residence and a third year devoted to the preparation of a doctoral dissertation. Under certain conditions credit for advanced standing will be granted for work taken in residence in graduate schools of other universities. Each Department or Committee reserves the right to require prospective candidates for the degree to perform work in excess of its minimum standards to assure thorough mastery of the area.

Prospective candidates, except in American Civilization, Philosophy and Psychology, must demonstrate proficiency in at least two foreign languages. In all areas of study the student must satisfactorily pass a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. In addition, all prospective candidates must write a doctoral dissertation and defend it in a final oral examination.

To be eligible for award of the Ph.D. degree in any given year, the student must have (1) been admitted to candidacy for the doctorate, (2) completed all residence requirements, and (3) passed all language and qualifying examinations, by the close of the semester preceding the semester in which the degree will be conferred. Doctoral dissertations must be

submitted to department chairmen by December 2 for February degrees, and April 1 for June degrees. In addition, notification that the doctoral dissertation has been approved and that the dissertation examination has been passed must have been communicated to the Dean of the Graduate School no later than January 7 in the case of February degrees or May 15 in the case of June degrees.

Students entering Brandeis University with no previous graduate work must earn the Doctor's degree within eight years from the inception of study. Students who enter Brandeis University with a Master's degree shall be required to complete the Ph.D. in seven years.

Language Requirements

A reading knowledge of at least one foreign language is required of all students engaged in programs of study leading to the M.A. degree. A reading knowledge of at least two foreign languages is required of all students engaged in programs of study leading to the M.F.A. A reading knowledge of at least two foreign languages except in History of American Civilization, Philosophy and Psychology, is required of all students engaged in programs of study leading to the Ph.D. degree. Candidates for the Ph.D. degree in Music are required to have a reading knowledge of three foreign languages. Graduate departments may require degree candidates to demonstrate proficiency in additional languages. Each department determines which languages are acceptable as satisfying the foreign language requirements.

Students are expected to satisfy the language requirements as soon as possible. The completion of the language requirements at another university does not exempt the candidate from the Brandeis requirements. The student should present himself for at least one language examination during his first year of residence.

A student who has not passed an examination in at least one foreign language by the end of his first year of study will not be eligible for financial aid from the University for the second year.

All Ph.D. candidates must pass their second language examination no later than the semester preceding the semester in which the degree is to be conferred.

Many departments require that language examinations be passed at an earlier time than specified in these provisions. Special requirements will be found in the departmental statements included in this catalog.

Admission to Candidacy

A student who (a) has demonstrated a knowledge and mastery of the subject matter of his field at a level satisfactory to his Department or

Committee; (b) has passed all departmental qualifying examinations; (c) has indicated a capacity for independent research of high quality; and (d) has satisfactorily completed all specific Department or Committee requirements for admission to candidacy may, at the recommendation of the Department or Committee, be admitted by the Graduate Council to candidacy for the degree of Doctor of Philosophy. In order to be eligible for the award of the degree, the student must be admitted to candidacy at least one semester before the degree is awarded.

Application for Graduate Degrees

Candidates for the M.A., M.F.A., and Ph.D. degrees must file with the Graduate School Office an application for the degree no later than December 3 for a February degree and no later than April 1 for a June degree of the academic year in which the degree is to be conferred. Upon the written recommendation by a candidate's Department or Committee that his application be approved, his record will be reviewed by the Graduate Council which recommends him to the University's Board of Trustees for the degree. In case of failure or withdrawal from candidacy in any year, the student must reapply by filing a new application in a later year.

Dissertation and Final Oral Examination

Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 4 for a February degree and April 1 for a June degree of the academic year in which the Ph.D. degree is to be conferred. The style and format of all dissertations are determined by the respective departments. The chairman will then appoint two or more readers, besides the principal supervisor, to read the candidate's dissertation. Certification of the approval of the dissertation by these readers will be communicated to the Dean of the Graduate School and to the chairman of the Department or Committee. The chairman will then schedule a final oral examination and notify both the Dean of the Graduate School and the candidate of the time and place of the examination at least three weeks prior to the scheduled date of the dissertation defense.

The dissertation, when approved by the readers, must then be deposited in the Office of the Graduate School, where it will be available to all interested members of the faculty for at least two weeks prior to the final oral examination.

The Dean of the Graduate School will publish in the *University Gazette* the time and place of a candidate's final oral examination and the



title of his doctoral dissertation. The final oral examination will be open to any member of the faculty engaged in graduate instruction and to invited faculty members of other institutions.

The Examining Committee, recommended by the department chairman and approved by the Dean of the Graduate School must be composed of at least three members of the faculty. At least one member of the examining committee shall be from a graduate area outside the student's own, though preferably from a related area.

The examination may be restricted to a defense of the dissertation, or may cover the whole field of the dissertation. The candidate will be notified by his Department or Committee of his responsibility for coverage at the examination.

A report, signed by the Examining Committee, certifying the candidate's successful performance on the final oral examination, will be submitted to the Dean of the Graduate School no later than January 7 for a February degree or May 16 for a June degree of the year in which the degree is to be conferred.

Deposit and Publication of Dissertation

By January 27 for February degree candidates, or June 5 for June degree candidates, the candidate must deposit two copies of his finished dissertation, including the original typescript, in a state suitable for microfilm and Xerox publication. Both copies of the dissertation must have the signed approval of the dissertation supervisor and readers. One copy will be retained by the library, the other by the department, both in bound form. The candidate must also submit two copies of an abstract of the dissertation, not exceeding 600 words, which has been approved by the dissertation supervisor.

A detailed statement of the Graduate School publication regulations is available from the Graduate School Office. See also the statement in this catalog, under *Fees*, on the Final Doctoral Fee.

Fees

All fees are payable on the dates they are due. In exceptional cases, students may make prior arrangements with the Office of University Finance for installment payments. A candidate for a June degree must pay any outstanding indebtedness to the University by June 1, just prior to Commencement, or his name will be stricken from the rolls of degree candidates. Candidates for February degrees must pay any outstanding indebtedness by January 15 of the year in which the degree is conferred.

Payment of tuition and other fees due on the day of registration is a part of the registration procedure. A student who is not prepared to pay such fees on the day of registration and who has not made alternative arrangements for payment with the Office of University Finance will be refused the privilege of registration. A registered student who defaults in the payment of indebtedness to the University shall be subject to suspension, dismissal and refusal of a transfer of credits or issuance of a transcript. A student who has been suspended or dismissed for nonpayment of indebtedness to the University may not be reinstated until such indebtedness is paid in full.

Application Fee: \$10.00. Payable by all applicants for admission at the time the application for admission is submitted and is not refundable. Checks and money orders should be made payable to the order of Brandeis University. No application for admission will be processed until this fee is paid. This fee is not required of Brandeis graduates.

Tuition Fee: The fees for tuition in the Graduate School for 1966-67 are as follows:

Full-time resident students: \$1,650 per year, or \$825 per semester.

Part-time resident students:

<i>Per Semester</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$618.75	\$1,237.50	Three-quarters
\$412.50	\$ 825.00	One-half
\$206.25	\$ 412.50	One-quarter

Special Students: \$206.25 per course per semester.

The fees for tuition for 1967-68 will be increased as follows: Full-time resident students: \$1,900 per year, or \$950 per semester.

Part-time resident students:

<i>Per Semester</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$712.50	\$1,425.00	Three-quarters
\$475.00	\$ 950.00	One-half
\$237.50	\$ 475.00	One-quarter

Special Students: \$237.50 per course per semester.

Post-Residence Fee: Students who have completed their residence requirements and who wish to continue in residence to utilize any academic service or University facility must register at the usual tuition rates. Graduate students whose tuition is not being paid from scholarship or fellowship funds awarded by the University or other sources may petition the Dean of the Graduate School for a reduction of the post-residence fee to \$250. Students who continue to utilize any academic service or University facility after having completed residence, but who have failed to register, are subject to disciplinary action by the Dean of the Graduate School. A student who is eligible for registration on the post-residence basis may file a program card for full-time study, in terms of courses or in terms of time or any combination thereof, provided his department chairman approves of the program of study as being a full-time program and signs the program card.

Mixed Tuition Fee: In the event that a student needs to register for only a part-time program (one-quarter, one-half, or three-quarters) in order to complete his residence requirements, but wishes to register for additional courses or take a fuller program of study, he shall be charged for the part-time program needed to complete his residence, plus the post-residence fee.

Summer Tuition Fee: Brandeis University does not conduct a regular summer school session, however, special courses of study on an individual basis may be arranged for regular students. The tuition for graduate students who remain in residence for special summer programs of a twelve week duration is \$500.00, and of an eight week duration, \$350.00.

Late Registration Fee: \$10.00. Payable for failure to complete registration at the time announced by the Graduate School Office. (Consult the Academic Calendar.)

Change-of-Program Fee: \$10.00. Payable by any graduate student who wishes to change his program of study later than two weeks after the first meeting of classes in each semester.

Continuation Fee: \$10.00. Payable annually by graduate students who have completed residence requirements and who are not registered during the period in which they are preparing for the completion of degree requirements. Students in this category are not eligible for leave of absence.

Master's Fee: \$50.00. A candidate for the M.A. or the M.F.A. who is subject to the Continuation Fee and who submits a Master's thesis or takes a qualifying examination in any semester following one in which he has not been in residence, shall pay the Master's Fee. The fee is chargeable only once. The Continuation Fee will be applied toward payment of the Master's Fee.

Final Doctoral Fee: \$250. This fee covers all costs for the year in which the Ph.D. degree will be conferred, including the costs for the microfilm publication of the doctoral dissertation, the publication of the abstract of the dissertation in *Dissertation Abstracts*, copyright protection for the author if desired, issuance of a Library of Congress number and appropriate library cards, binding two copies of the dissertation for use in the University Library, and the Xerox-printed copies in book form for the author. The Final Doctoral Fee also covers the rental expenses for academic robes for the candidates at graduation and the cost of the diploma. Students who have been in residence in their final year may deduct any tuition charges which they may have paid to the University in that final year. Students who have paid the Continuation Fee in the final year may deduct that fee from the Final Doctoral Fee.

NOTE: All candidates for the Ph.D. degree must pay the \$250 Final Doctoral Fee prior to the receipt of their degrees. A candidate may, however, elect not to contract for the Xerox publication of his dissertation, and in lieu thereof may separately arrange for its publication either as a book or as articles in scholarly journals within twenty-four months following the award of the degree. On due evidence that the work has been published or is scheduled for publication within the required time, a maximum rebate of \$125 of the Final Doctoral Fee may be authorized.

Reinstatement Fee: \$10.00. Payable by a student who, after suspension or dismissal, has been reinstated with the consent of the Dean of the Graduate School.

Transcript Fee: \$1.00. Students, former students and graduates who request official transcripts of their records in the Graduate School are charged \$1.00 for each copy issued after the first one, which is issued free of charge. Requests by mail for transcripts must be accompanied by a check in the correct amount, payable to Brandeis University.

Diploma Fee: \$10.00. Payable by candidates for the M.A. and M.F.A. degrees.

Student Health Plan Fee: \$55.00. Payment of the mandatory Health Plan Fee entitles the graduate student to utilize the facilities of the Health Office during the academic year and to participate in the benefits of the Health Insurance Program. The fee is payable at registration and no portion is refundable.

Waiver of Fee: A waiver of the insurance coverage only and a rebate of \$25.00 may be granted upon presentation by the student of a statement from his insurance company, which certifies that similar coverage is in effect. This statement must be presented at the time of registration or the

student will be included automatically under the University Student Health Plan and will be billed \$55.00. Request for such waiver should be made by the student on the "Student Health Insurance" form mailed by the University with each notification of admission and readmission.

Exceptions: The University Student Health Plan is optional for special students.

Dependent Coverage: Although the health services offered at Stone-man Infirmary are not extended to dependents of students, an optional family plan is available to married students for an additional fee of \$67.32. Special students are not eligible for coverage for dependents.

Refunds

The only fee which may be refundable, in part, is the tuition fee. No refund of the tuition fee will be made because of illness, absence or dismissal during the academic year. If a student withdraws within 30 days from the beginning of classes, he may petition the Office of University Finance for a partial refund of tuition. A refund may be denied without any reason for such denial being stated.



Financial Assistance

To help students whose records indicate scholarly promise, the University makes available a variety of awards and work opportunities. No student is eligible for aid unless he files with the Graduate School Office an "Application for Financial Assistance" by the first business day in March. In exceptional circumstances applications received from prospective students later than this date may be given consideration. All scholarships and fellowships are granted for one academic year; therefore, a registered student who holds a scholarship or fellowship must apply for a renewal by filing the "Application for Financial Assistance" by the first business day in March.

All awards are granted and accepted with the understanding that they may be revoked or reduced at any time for conduct or academic standing that may be regarded as undesirable.

No student may hold a fellowship, scholarship, or teaching assistantship for more than two years of study for the M.A. degree, for more than three years of study for the M.F.A. degree, or for more than four years of study for the Ph.D. degree. No student may receive a scholarship, fellowship, or teaching assistantship after one year of study at the post-residence fee. Part-time students are ineligible for fellowship awards, and are not ordinarily considered for scholarship awards. Teaching assistants who are part-time students may apply for scholarships. Priority in making awards is given to full-time students and teaching assistants.

Scholarships

A scholarship is an award, on grounds of scholarly ability and need, of financial credit that may be used exclusively for remission of tuition fees. Full scholarships in the value of \$1,650 and partial scholarships are available. Scholarship students are liable for all fees, but tuition fees in the amount of a scholarship award shall not be charged.

Fellowships

A fellowship is an academic award of honor to outstanding students of good character to help them in furthering advanced study and research. Fellowships carry stipends ranging up to \$2,000 in the graduate programs in the humanities and social sciences and up to \$4,000 in the graduate science programs. The amount of the stipend depends on the quality of the student's record and performance; need is also considered in most cases. A fellowship recipient must pay tuition fees unless he is also awarded a scholarship in an amount covering tuition. No services are required of students for fellowship or scholarship awards.

Teaching Assistantships

Teaching assistants are resident students in the Graduate School who do part-time teaching as part of their training and are paid a stipend in return for services rendered. The University has established teaching assistantships to enable distinguished graduate students to gain teaching experience while continuing their studies. Teaching assistants are eligible for other awards, including scholarships and fellowships.

A full-time student who is a teaching assistant receives residence credit for, and is charged tuition for, that fraction of his program spent as a student in fulfillment of degree and residence requirements. No teaching assistant may carry more than a one-half time teaching assignment. A one-quarter time teaching assignment consists of about six hours of laboratory supervision per week or three hours of classroom instruction per week, or the equivalent. A graduate student who has not completed his residence requirement and is assigned to a one-quarter time teaching assignment must register for at least a three-quarter program of study for credit in order to be considered a full-time student. A student who has not completed his residence requirement and is assigned less than a one-quarter time teaching assignment must register for a full-time program of study to be considered a full-time student. A one-half time teaching assignment requires that the student who has not completed his residence requirement must register for a one-half time program of study for credit in order to be considered a full-time student. Ordinarily, only graduate students who have completed their residence requirement will be considered eligible for one-half time teaching assignments. A student who needs to register for only a partial program of study to complete his residence requirement and who is assigned a teaching assistantship is regarded as a full-time student.

First-year graduate students are eligible for appointment as teaching assistants in the sciences. In other areas, however, first-year students are rarely appointed. Foreign students are not normally eligible for appointment as teaching assistants in their first year of graduate work unless they have had training at another American university.

Teaching assistantship appointments are made by the President of the University on the recommendation of the Dean of the Graduate School who, in turn, acts on the recommendation of a student's department chairman. A graduate student who is interested in being appointed as a teaching assistant should write or see his chairman. Appointments are made for periods of one year or one semester, but are renewable. All awards of teaching assistantships to incoming students are conditioned on an interview with a University representative, prior to registration. The University reserves the right to terminate any appointment at any time for due cause.

Conduct, character or academic standing that is regarded as undesirable may constitute cause, but the University need not assign any reason for the termination of an appointment at any time. All teaching assistantship appointments are made and accepted with this understanding, and neither the University nor any of its Trustees or officers shall be under any liability whatsoever for the summary termination of a teaching assistantship.

In the case of a student receiving financial aid from Brandeis University, whether in the form of a teaching assistantship, scholarship or fellowship, the approval of the Dean of the Graduate School is required, in addition to the approval of the department chairman, before the student may engage in outside employment. Approval is not normally granted in the case of full-time students receiving financial aid from the University.

Research Assistantships

Research assistantships, which sometimes carry stipends in excess of \$4,000, are available in the science areas, though first-year graduate students are not normally eligible for appointment. Application should be made to the chairman of the Department or Committee administering the graduate program.

Loan Funds

Applications for University loans may be made to the Office of University Finance, with the prior approval of the Dean of the Graduate School.

Brandeis University participates in the National Defense Education Act Student Loan Fund. Application for N.D.E.A. loans are made in the same manner as University loans.

Normally, graduate students are ineligible for loan funds until they have completed one semester in residence. Part-time and special students are not eligible for loan funds.

Resident Counsellorships

A limited number of resident counsellorships, providing room, board and remission of tuition are available to both men and women. Interested applicants should apply to the Office of the Dean of Students, Gryzmish Academic Center, no later than the first business day in March. Appointments are made by the Dean of Students on the recommendation of the Dean of the Graduate School.

Employment

On occasion the University offers part-time employment to specially trained persons. Inquiries should be addressed to the Office of Career Planning, Gryzmish Academic Center.

Areas of Study and Courses

All courses meet for three hours a week unless the course description indicates otherwise. The presence of "a" in the course number indicates a half course given in the Fall Term; "b" indicates a half course given in the Spring Term; "aR" indicates a course given in the Spring Term, "bR," courses given in the Fall Term which is identical with "a" or "b" courses of the same number given in the Fall and Spring Terms respectively; the use of "c" after a course number indicates that the course is given as a half course but meets throughout the year.

Half courses normally carry three credits and full courses six. Exceptions are noted under the individual course descriptions. Additional credits are given for laboratory hours, as indicated in the course descriptions.

The University reserves the right to make any necessary changes in the offerings without prior notice.

American Civilization

See History of American Civilization (page 107).

Anthropology

Objectives

The graduate program in anthropology is designed primarily to train students at the doctoral level. The objective is to provide the student with a broad understanding of the four major fields of anthropology, with particular stress on ethnology and social anthropology, and to prepare the student for independent research and scholarship. Accordingly, there is a strong emphasis on training in comparative work and fieldwork, which are integral parts of the doctoral program.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students need not have an undergraduate major in anthropology or sociology-anthropology. If admitted, however, the student without previous training in anthropology may be required to take additional courses, as determined by the department, to complete his residence requirements. Students should have a reading knowledge of one foreign language.

Faculty

Professor ROBERT A. MANNERS, *Chairman*: Africa. The Caribbean. Modern cultures.

Professor HELEN CODERE: Africa. Political systems. Method and theory.

*Associate Professor JOEL HALPERN: Eastern Europe. Southeast Asia. Developing areas.

Associate Professor DAVID KAPLAN: Mexico. Economics. Method and theory.

**Associate Professor ALEX WEINGROD: Social organization. Community development. Culture change.

Assistant Professor GEORGE L. COWGILL: Archaeology. Mathematical methods in anthropology. Culture-ecological approaches to prehistory.

Assistant Professor RICHARD FOX: India. Markets and marketing. Immigrant enclaves.

Assistant Professor STEPHEN HOLTZMAN: Physical anthropology. Intra-human organization. Theory.

Assistant Professor KARL REISMAN: Linguistics. Caribbean. Folk literature.

*Assistant Professor MARGUERITE ROBINSON: Social organization. South Asia. Oceania.

Assistant Professor BENSON SALER: Middle America. Culture and personality. Primitive philosophies and religion. Formal analysis.

Degree Requirements

Master of Arts

Students are required to complete a minimum of twenty-four course credits and to demonstrate proficiency in one foreign language and in the following subject areas: archaeology, cultural anthropology, linguistics, statistics and physical anthropology. All first year students will be expected to pass a written qualifying examination in archaeology and cultural anthropology upon completion of one year in residence. Proficiency in the remaining subject areas may be demonstrated by passing the required courses with a grade of "B" or better or by passing a special qualifying examination in these areas which may be taken at the student's option either at the end of the first or second year in residence. A research paper based on the summer field training exercise or on a subject chosen by the student in consultation with his adviser will be required.

The M.A. degree will be conferred upon satisfactory completion of these requirements. Students will be required to take for credit or audit An-

*On Leave, 1966-67.

**On Leave, Fall Term, 1966-67.

thropology 300 for at least two semesters; the choice of credit or auditing and of timing is made by the department.

Doctor of Philosophy

Admission to the Program. Students who complete the M.A. requirements at Brandeis at a high level will be admitted to the Ph.D. program. Students with an M.A. in anthropology from other institutions, or with a minimum of a full academic year of graduate course work in anthropology from other institutions, may come to Brandeis as prospective candidates for the Ph.D. degree. After a minimum of one semester's work, the department may, at its discretion, grant the student transfer credit of up to one year toward the Ph.D. residence requirements. In most instances, transfer students will be required to meet the departmental requirements described for the Master's program, but at the discretion of the department these may be waived.

Program of Study. Ph.D. candidates must complete two years of residence at Brandeis, and a minimum of forty-eight hours of credits. Work toward the M.A. at Brandeis may be counted as a part of residence, as may work done elsewhere, as stipulated above and in the general rules of the Graduate School. At least thirty-six course credits must be in anthropology. Students will be required to take for credit or audit Anthropology 300 for at least two semesters, the choice of credit or audit, timing, and number of semesters is made by the Department.

Language Requirements. A reading knowledge of two acceptable foreign languages is required of all Ph.D. candidates. Proficiency in at least one of these languages must be demonstrated in the first year of residence. At its discretion the department may require proficiency in two languages prior to beginning dissertation research.

Summer Training Program. A selected group of students in the Ph.D. program will be invited each year to participate in a fully subsidized summer field training program under the direction of a faculty member. No student will be admitted to this program unless he has passed those parts of the qualifying examination dealing with cultural anthropology and archaeology.

Admission to Candidacy. A student is admitted to candidacy on satisfactory completion of the following: the general qualifying examination (where required); an examination in at least one foreign language; forty-eight hours of course credits; and a predoctoral examination which may cover any aspects of anthropology and will test the scope of the student's knowledge and his ability to integrate that knowledge.

Field Work for the Dissertation. As soon as possible after qualifying for candidacy for the Ph.D., the candidate will be expected to begin a full year of field research, which will ordinarily form the basis of his dissertation.

Dissertation and Defense. The degree of Ph.D. will be awarded only after successful defense of the dissertation.

Courses of Instruction

ANTHROPOLOGY 102a. Anthropological Linguistics I

Training in the recording and analysis of spoken languages. Consideration of some major theories of language. Role of language in nature and culture.

Mr. Reisman

ANTHROPOLOGY 102b. Anthropological Linguistics II

Historical relations among languages. Linguistic evidence in the study of prehistory. Language contact. Study of speech communities and ethnography of speaking. Semantic analysis. Expressive language, paralinguistics, kinetics, speech surrogates.

Mr. Reisman

ANTHROPOLOGY 103b. Language and Culture*

Language and thought; speech differences within societies; processes of change; expressive language and poetics; problems of translation; extension of linguistic methods to other modes of communication. No previous training in linguistics is necessary.

ANTHROPOLOGY 110bR. Physical Anthropology

An introduction to the major fields of physical anthropology; human evolution, genetics, anatomy, and modern views of race.

Mr. Holtzman

ANTHROPOLOGY 112a. Culture and Biology*

A bio-cultural exploration of population genetics and human evolution.

ANTHROPOLOGY 121a. Quantitative Techniques in Anthropology

An introduction to the use of statistics and related techniques in anthropological research, emphasizing non-parametric methods and cross-cultural sampling.

Mr. Cowgill

ANTHROPOLOGY 122a. Archaeological Methods*

An introduction to archaeological methods, including field and laboratory procedures; scientific apparatus useful in detection, dating, and analysis of prehistoric materials; problems in the processing and presentation of archaeological data; and the nature of archaeological theory.

ANTHROPOLOGY 123a. Human Prehistory

A survey of man's prehistoric cultures and an introduction to the techniques and concepts used by archaeologists in obtaining and interpreting data about these early cultures.

Mr. Cowgill

ANTHROPOLOGY 127b. Origins of Early Civilizations of the World*

The development of the earliest food-producing communities and the rise of the earliest civilizations of the Old and New World, based on archaeological data. The emphasis is comparative and theoretical.

*Not to be given in 1966-67.

ANTHROPOLOGY 128b. Civilizations of Middle America*

Development of Prehispanic cultures of Middle America from the earliest agricultural settlements through Olmec, Teotihuacan and Classic Maya to the Aztec state.

ANTHROPOLOGY 133b. Peoples and Cultures of Africa*

An examination of the indigenous organization of representative African societies in their ecological and historical settings.

ANTHROPOLOGY 134b. Tribe and Nation-State in Africa*

Seminar on the background and problems of independence in selected African areas.

ANTHROPOLOGY 135a. Peoples and Cultures of India

An examination of institutions of representative Indian peoples and their relationship to the wider Indian society. *Mr. Fox*

ANTHROPOLOGY 136b. Cultures of the Far East*

China, Japan, and Korea. Problems of evolution and development in a context of diverse influences.

ANTHROPOLOGY 137a. Cultures of Southeast Asia*

Survey of civilizations and tribal peoples in the area between India and China. Emphasis on cultural interrelationships in the framework of both historical and contemporary problems.

ANTHROPOLOGY 138b. Cultures of Eastern Europe and the Soviet Union*

Social organization, religion, class structure and other topics dealing with the various ethnic groups in Eastern Europe and the U.S.S.R., both past and present. Agricultural, nomadic and urban societies in this area, including central Asia, will be studied.

ANTHROPOLOGY 139b. Peoples and Cultures of the Mediterranean

A comparative analysis of contemporary rural peoples in the Mediterranean region (Europe, North Africa, Middle East) and their relationships to urban settings. *Mr. Weingrod*

ANTHROPOLOGY 141b. The American Indian

A survey of the peoples and cultures of aboriginal North America. *Miss Codere*

ANTHROPOLOGY 142b. Peoples and Cultures of the Caribbean*

History, ecology, and culture of the Circum-Caribbean from earliest European contact to the present.

ANTHROPOLOGY 143a. Modern Cultures of Middle America*

Contemporary Indian and Ladino societies.

ANTHROPOLOGY 151a. Social Organization

Theories of social organization, the interrelations of social institutions, current anthropological methods of interpretation and analysis. *Mr. Saler*

*Not to be given in 1966-67.

ANTHROPOLOGY 151b. Social Organization*

A continuation of 151a. This course will emphasize structural analysis. Designed primarily for advanced undergraduate and graduate students.

ANTHROPOLOGY 152a. Economic Anthropology

Economic institutions of non-industrial societies.

Miss Codere

ANTHROPOLOGY 154a. Primitive Religion

An exploration of belief and behavior in societies of non-literate peoples with reference to theories concerning the origins and functions of religion. *Mr. Saler*

ANTHROPOLOGY 155b. Culture and Personality

An examination of the relationships between sociocultural systems and individual psychological processes with a critical evaluation of selected theories and studies bearing on this problem. *Mr. Saler*

ANTHROPOLOGY 156a. Political Anthropology*

Politics, government, law, crime and warfare in primitive societies.

ANTHROPOLOGY 158b. Folk Literature*

Geographical and structural analysis of forms of verbal art: proverb, myth, folktale, etc. Discussion of their role in specific social institutions and in everyday speech behavior. Problems of literature in colonial areas and emerging nations.

ANTHROPOLOGY 159b. Cultural Ecology

An analysis and criticism of various theories of cultural ecology, and the application of cultural ecological concepts to specific research problems. *Mr. Manners*

ANTHROPOLOGY 161b. Culture and Cognition

An exploration of formal techniques utilized by anthropologists in the attempt to discover and analyze systems of meaning and categorization. *Mr. Saler*

ANTHROPOLOGY 162b. Infra-human Social Behavior

An exploration of social behavior in phylogenetic perspective. *Mr. Holtzman*

ANTHROPOLOGY 163a. Community Studies in Anthropology*

Seminar on problems and limitations of anthropological analysis of modern communities. Intensive study of cases from contemporary anthropological materials.

ANTHROPOLOGY 165a. Social Stratification in Pre-Industrial Societies*

The nature and function of inequalities of status and/or wealth, and the relation of these factors to other aspects of the culture.

ANTHROPOLOGY 166b. Social and Cultural Change*

Selected case studies and theories bearing on the problem of change in culture and society.

*Not to be given in 1966-67.

ANTHROPOLOGY 167b. Modernization and Modernization Movements*

A comparative analysis of programs of economic, political and social reforms. Emphasis is placed upon national government-sponsored modernization programs, particularly as they become articulated within local village communities. Materials will be drawn from Asia, India, the Middle East and Latin America.

ANTHROPOLOGY 175aR. Pro-Seminar in Anthropological Method and Theory: I

Analysis of representative classics in anthropology.

Miss Codere and Mr. Reisman

ANTHROPOLOGY 175bR. Pro-Seminar in Method and Theory in Cultural Anthropology: II

The development of anthropological theory, major present-day trends and their relation to problems of research.

Mr. Kaplan

Primarily for Graduate Students

ANTHROPOLOGY 205a. Comparative Agrarian Societies

Representative agrarian cultures will be dealt with in detail, with particular emphasis on the interrelationship between the city, the rural community and the state.

Messrs. Kaplan and Weingrod

ANTHROPOLOGY 226. Readings and Research in Archaeology *Mr. Cowgill*

ANTHROPOLOGY 227. Readings and Research in Linguistics *Mr. Reisman*

ANTHROPOLOGY 228. Advanced Readings in Method and Theory *Mr. Kaplan*

ANTHROPOLOGY 229. Guided Comparative and Historical Research *Mr. Weingrod*

ANTHROPOLOGY 230. Readings and Research on Cultures of Hunters and Gatherers
Mr. Saler

ANTHROPOLOGY 235. Readings and Research in Oceania*

ANTHROPOLOGY 236. Readings and Research on East and South Asia *Mr. Fox*

ANTHROPOLOGY 237. Readings and Research in African Cultures *Mr. Manners*

ANTHROPOLOGY 238. Readings and Research in Southeast Asian Cultures*

ANTHROPOLOGY 239. Readings and Research in North American Indian Cultures
Miss Codere

ANTHROPOLOGY 240. Readings and Research in Cultures of the Caribbean
Mr. Reisman

ANTHROPOLOGY 241. Readings and Research on European Communities*

ANTHROPOLOGY 300a and b. Graduate Seminar in Anthropology

Consideration of selected field studies.

Required of all graduate students.

Mr. Reisman, 1st sem.

Mr. Fox, 2nd sem.

ANTHROPOLOGY 302. Summer Research Training

Field work for three months during the summer under the supervision of a member of the staff. *6 credits.*

Mr. Manners

*Not to be given in 1966-67.

ANTHROPOLOGY 305. Anthropological Colloquium

Staff

ANTHROPOLOGY 400-410. Dissertation Research

Independent research for the Ph.D. degree.

400. *Miss Codere*406. *Mr. Manners*401. *Mr. Cowgill*407. *Mr. Reisman*402. *Mr. Fox*408. *Mrs. Robinson*403. *Mr. Halpern*409. *Mr. Saler*404. *Mr. Holtzman*410. *Mr. Weingrod*405. *Mr. Kaplan*

Biochemistry

Objectives

The graduate program in biochemistry leading to the degree of Doctor of Philosophy is designed to equip the student with a broad understanding of the chemistry involved in biological processes and to train him to carry out independent original research. Although the student will be primarily responsible for a comprehensive understanding of biochemical phenomena, he will be encouraged to acquaint himself with the disciplines of biology and chemistry. Research and experimental projects rather than formal course training will be emphasized. The student will, however, be required to take courses in advanced biochemistry, organic chemistry, physical biochemistry, biochemical techniques, and biochemistry seminars. The choice of advanced biochemistry courses and those of other scientific disciplines (i.e., organic chemistry, genetics, embryology, etc.) are subject to the student's particular interests. The choice of research programs should be in areas under investigation by the faculty; some of these fields include intermediary metabolism in normal and also tumor tissues, enzymology, immunochemistry, radiobiology, biochemical genetics, protein chemistry, plant and virus metabolism, problems in growth and differentiation, photobiology, microbial metabolism, and organic biochemistry.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this area of study. Applicants for admission to the Biochemistry Department are also required to take the Graduate Record Examination. The student's undergraduate curriculum should include some fundamental courses in biology and chemistry which will be subject to final staff approval.

Faculty

Professor NATHAN O. KAPLAN, *Chairman*: Intermediate metabolism. Biochemical basis of chemotherapy. Anti-enzyme action. Molecular heterogeneity of enzymes. Changes in structure of enzymes during adaptation, differentiation, mutation, and development.

*Professor WILLIAM P. JENCKS: Mechanisms of reactions catalyzed by enzymes, coenzymes, and by chemical catalysts. Effects of salts and denaturing agents on proteins. Mechanisms, catalysis and equilibria of reactions of "energy-rich" compounds of importance in biochemistry and chemistry.

Professor LAWRENCE LEVINE: Immunochemistry. Effect of antigenic conformation on the antigen-anti-body reaction.

Visiting Professor FARNSWORTH LOOMIS: Biochemistry of differentiation and growth with special reference to primitive animal systems. Role of $p\text{CO}_2$ in biological systems. Relationship of hydra to single cell systems in tissue culture.

Professor SERGE N. TIMASHEFF: Physical chemistry of proteins, in particular, structure in solution and interactions of proteins. Effects of amino acid substitution in genetic variants; macro-molecular properties of biological polymers.

Associate Professor ROBERT H. ABELES: Mechanism of enzyme action, with particular reference to the mechanism of action of reactions involving derivatives of Vitamin B-12 and the mechanism of isomerizations.

Associate Professor GERALD D. FASMAN: Conformation of biological macromolecules. Protein models, synthesis, conformational studies and biological properties of polyamino acids. Polyribonucleic acids conformational studies.

Associate Professor LAWRENCE GROSSMAN: Nucleic acid metabolism in normal, tumor and virus-infected cells. Problems in biochemical replication. Action of pyrimidine analogs in chemotherapy.

**Associate Professor JOHN M. LOWENSTEIN: Metabolic regulation of carbohydrate utilization and fat synthesis. The interaction of metabolic pathways. Enzymatic and non-enzymatic reactions of nucleoside triphosphates.

Adjunct Associate Professor FARAHE MALOOF: Biochemical pharmacology. Biochemistry of the thyroid. Effects of I^{131} irradiation on thyroid tissue.

Associate Professor GORDON H. SATO: Specialized function of cultured mammalian cells.

*On Leave, Spring Term 1966-67.

**On Leave, 1966-67.

- Associate Professor MORRIS SOODAK: Aspects of the metabolism of the thyroid gland. Mechanism of iodination and the mode of action of the goitrogenic drugs are being investigated in cell-free preparations of thyroid tissues.
- Associate Professor HELEN VAN VUNAKIS: Protein structure of enzymes and viruses. Mechanisms of viral infectivity. Photodynamic action of dyes on nucleic acids. Conversion of zymogens to enzymes.
- Assistant Professor WILLIAM S. ALLISON: Protein chemistry. Studies on functional groups of enzymes.
- Assistant Professor DAVID M. FREIFELDER: Hydrodynamic properties of nucleic acids; effects of environment on the secondary and primary structure of these polymers and their structure *in vivo*.
- Assistant Professor THOMAS C. HOLLOCHER, JR.: Free radicals in biological systems. Study of model free radical systems related to enzyme reactions. Biological oxidation. Nuclear magnetic resonance.
- Assistant Professor WILLIAM T. MURAKAMI: Biochemistry of virus infection. Metabolism of virus-infected cells. Purification and characterization of animal viruses.
- Research Assistant Professor GIOVANNI DI SABATO: Mechanism of enzyme action. Enzyme structure and binding of coenzymes.
- Adjunct Professor ABRAHAM GOLDIN: Cancer chemotherapy. Synergistic action of drugs. Biochemical effects of transplantable tumors.
- Adjunct Assistant Professor DAVID M. DAWSON: Protein synthesis in muscle and nervous tissue.
- Senior Research Associate SUSAN E. LEEMAN: Neurosecretion. The role of the hypothalamus in the regulation of autonomic function and in the control of anterior pituitary secretion.

Degree Requirements

Doctor of Philosophy

Program of Study. Each doctoral candidate must satisfactorily complete the following fundamental courses: advanced biochemistry, biochemical techniques, history of biochemistry, physical biochemistry and radiobiology, biochemical research problems, and at least four of the biochemistry seminars.

Language Requirements. A reading knowledge of French and German is required. One of the language requirements must be satisfactorily completed prior to the oral qualifying examination. The second language

requirement must be satisfactorily completed before the end of the second year of study.

Qualifying and Cumulative Examination. An oral qualifying examination must be taken, generally at the end of the first year. In this examination, the student will be asked to defend or refute two propositions. One proposition will be related to the research he selects for his dissertation and the second will be an assigned proposition concerned with a different area of biochemistry.

A series of one-hour cumulative examinations will be given every month and the student is required to pass six such examinations before he may present his dissertation.

Admission to Candidacy. The qualifying examination must be passed at a level satisfactory for this degree. Admission to candidacy usually takes place at the end of the second year of study.

Dissertation and Defense. A dissertation will be required which summarizes the results of an original investigation of an approved subject and demonstrates the competence of the candidate in independent research. A final oral examination based on the dissertation will be held.

Courses of Instruction

BIOCHEMISTRY 100a. Introductory Biochemistry

Chemistry and metabolism of compounds of biological importance, introduction to enzyme reactions, energy metabolism, cellular function and differentiation.

Prerequisite: Chemistry 25a and b. *Messrs. Loomis, Soodak, and Kaplan*

BIOCHEMISTRY 101. Advanced Biochemistry

A discussion of enzyme reactions including energetics, kinetics, and reaction mechanism. Metabolism of carbohydrates, lipids, amino acids, nucleic acids, vitamins and coenzymes, hormones and inorganic substances. Coupled enzyme reactions, such as oxidative phosphorylation, and the synthesis of macromolecules such as glycogen, protein and the nucleic acids.

Prerequisites: Chemistry 25a and b, Biochemistry 100a or their equivalent. Some background in elementary physical chemistry is recommended but not required.

Mr. Abeles and Staff

BIOCHEMISTRY 103a. History of Biochemistry

A discussion of significant discoveries which have led to present-day concepts of biochemistry.

Prerequisite: Biochemistry 100a.

Mr. Kaplan and Staff

BIOCHEMISTRY 200a and b. Biochemistry Techniques

Students registered for this course will participate for a period of approximately six weeks in several research programs being conducted by the staff members.

Prerequisite: Biochemistry 100a (may be taken concurrently) and consent of the department.

Mr. Grossman and Staff

BIOCHEMISTRY 201. Physical Biochemistry and Radiobiology

Kinetics of enzyme reactions; measurement of free energy, heat and entropy values in biological systems; transition state theory; elements of data analysis; problems in physical techniques; isotope techniques and radiation effects; computer applications.

Prerequisite: Biochemistry 100a (may be taken concurrently).

Messrs. Timasheff and Hollocher

BIOCHEMISTRY 202b. Chemistry of Enzyme-Catalyzed Reactions

A discussion of the chemistry of certain enzyme-catalyzed reactions compared to the corresponding uncatalyzed or chemically catalyzed reactions. Some consideration of the mechanisms through which enzymes may exert their catalytic effects.

Prerequisites: Chemistry 131 and Biochemistry 101, or equivalent, taken previously or concurrently.

Mr. Jencks

BIOCHEMISTRY 203a. Metabolic Regulation*

Regulation of rates of enzyme reactions, regulation of enzyme levels, rate determining steps in metabolic pathways, control phenomena such as the Pasteur effect and the regulation of fat synthesis.

BIOCHEMISTRY 204b. Metabolism in Relation to Function*

This course is to introduce the student to physiology. Circulation, digestion, excretion, excitation and homeostatic control mechanisms will be discussed. Where possible, physiological function will be related to cellular metabolism.

Prerequisite: Biochemistry 100a.

BIOCHEMISTRY 205a. Biochemical Genetics*

Recent advances in the chemistry of inheritance will be discussed with emphasis on recombination, transformation and transduction phenomena in microorganisms. The problem of gene function, and enzyme formation and function, will be considered together with the contribution of microbial and animal mutants to the study of metabolic pathways.

Prerequisite: Biochemistry 100a (may be taken concurrently).

BIOCHEMISTRY 206a. The Nucleic Acids*

Chemical and physical properties of the nucleic acids and monomeric units will be examined. Current chemical and enzymatic polymerization pathways and the biochemical roles of nucleic acids in protein synthesis, virus replication and genetic coding will be discussed.

Prerequisite: Biochemistry 100a, 101a and b.

BIOCHEMISTRY 207b. Immunochemistry*

Mode and mechanism of antigen-antibody interaction; application of immunochemical methods to the estimation and characterization of proteins, polysaccharides, nucleic acids and natural proteins with biological activity such as enzymes and hormones.

*Not to be given in 1966-67.

BIOCHEMISTRY 210a. Protein Chemistry*

The following will be discussed: chemical and physical properties of proteins, peptides, and amino acids; methods of determination of molecular weight, purity, and structure and isolation techniques.

Prerequisite: Biochemistry 100a and one year of physical chemistry.

BIOCHEMISTRY 212b. Neurochemistry

The special chemistry and biochemistry of nervous tissue, both central and peripheral, will be discussed. Emphasis will be placed on lipid chemistry as well as on nucleic acid and protein synthesis in the nervous system. Nerve conduction; vision; the effects of neurotropic agents on the enzymatic mechanisms of the brain will be presented.

Prerequisite: Biochemistry 100a (may be taken concurrently). *Mr. Soodak*

Seminars

One or two seminars will be given each semester. Each student will present an oral and written report on one aspect of the following topics:

BIOCHEMISTRY 215a. Structure and Functional Specificity of Macromolecules

Miss Van Vunakis and Mr. Freifelder

BIOCHEMISTRY 216a. Biochemical Aspects of Differentiation and Growth***BIOCHEMISTRY 217a. Nucleic Acids*****BIOCHEMISTRY 218a. Biochemical Studies with Mammalian Viruses and Cultured Cells*****BIOCHEMISTRY 219b. Mechanism of Enzyme Action*****BIOCHEMISTRY 220a. Biochemical Basis of Chemotherapy*****BIOCHEMISTRY 222a. Oxidative Phosphorylation*****BIOCHEMISTRY 223a. Structure, Metabolism, and Function of Hormones*****BIOCHEMISTRY 224a. Physiology of Mammalian Cells**

Mr. Sato

BIOCHEMISTRY 225b. Biochemistry of the Gene

Messrs. Loomis, Grossman and Freifelder

BIOCHEMISTRY 226a. Advances in Neurochemistry***BIOCHEMISTRY 226b. Biosynthesis of Complex Variables*****BIOCHEMISTRY 227a. Naturally Occurring Small Peptides and Proteins*****BIOCHEMISTRY 400-415. Biochemical Research Problems**

Independent research for the Ph.D. degree.

400. *Mr. Kaplan*

408. *Mr. Maloof*

401. *Mr. Jencks*

409. *Mr. Sato*

402. *Mr. Levine*

410. *Mr. Soodak*

403. *Mr. Loomis*

411. *Miss Van Vunakis*

404. *Mr. Timasheff*

412. *Mr. Allison*

405. *Mr. Abeles*

413. *Mr. Freifelder*

406. *Mr. Fasman*

414. *Mr. Hollocher*

407. *Mr. Lowenstein*

415. *Mr. Murakami*

*Not to be given in 1966-67.

Journal Club, Colloquia, and Research Clubs

In addition to the formal courses announced above, all graduate students are encouraged to participate in the department's Journal Club and colloquia. The Journal Club is an informal meeting of the students, staff and post-doctoral fellows, where recent publications are discussed. Colloquia are general meetings of the department in which both speakers from the department and guest speakers will present their current investigations. Research clubs are organized by various research groups of the department.

Biology

Objectives

The graduate program in biology is designed to give the student an understanding of the fundamental nature of living processes, and to train him to undertake original research.

The department rarely admits a graduate student who desires a Master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology at this institution. These are: general biology, genetics, cell physiology, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects, but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Biology Department, each graduate student will report to the temporary graduate student adviser who will assist the student with his formal entry into the department and later with his program.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research. In recognition of this, the Biology Department provides summer stipends for its full-time graduate students.

Faculty

Professor MARTIN GIBBS, *Chairman*: Photosynthesis and plant physiology.

Professor HERMAN T. EPSTEIN: Radiation biology. Virus genetics.

Professor ALBERT KELNER: Genetics. Microbial genetics. Radiation biology.

Professor JEROME A. SCHIFF: Plant biochemistry and physiology. Intracellular development. Sulphur metabolism.

Professor MAURICE SUSSMAN: Microbiology. Cellular differentiation. Microbial genetics.

Professor ANDREW G. SZENT-GYORGYI: Chemistry of muscle contraction. Animal physiology.

Professor EDGAR ZWILLING: Vertebrate development. Tissue interactions.

Associate Professor CHANDLER FULTON: Invertebrate development. Cellular differentiation.

Assistant Professor DAVID H. GILLESPIE: Microbial and molecular genetics.

Assistant Professor ATTILA O. KLEIN: Plant physiology and metabolism.

Assistant Professor HERBERT OBERLANDER: Invertebrate physiology. Endocrinology and post-embryonic development of insects.

Assistant Professor GJERDING OLSEN: Animal physiology. Endocrinology.

Assistant Professor PHILIP A. ST. JOHN: Invertebrate physiology. Regeneration in invertebrates.

Degree Requirements

Master of Arts

Program of Study. The program leading to the M.A. degree in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the department. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will

be prescribed by the department. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department. This adviser will serve as the chairman of a committee of at least three departmental staff members, which will advise the student on courses to be taken and guide him throughout the thesis problem.

The thesis requirement may be waived under exceptional circumstances and only with the approval of the department staff.

Language requirements. All candidates are required to demonstrate a reading knowledge of French or German, or another foreign language acceptable to the department. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

Qualifying Examination. At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study. All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and development before taking the qualifying examination. The background a student is expected to have in these areas is equivalent to the course contents of Biology 101a, 101b, 103b, 202a, 204b, and Biochemistry 100a, 101. Entering students will be encouraged to take Biology 300a and b. The student will be expected also to have additional background in his area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department before the end of the second year. The adviser will assist the student in planning a well-balanced program in his specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

Language requirement. A reading knowledge of French and German, or another language acceptable to the department, is required. At least one of these requirements must be met before the student completes the first year of graduate study and before he is admitted to candidacy.

Qualifying Examination. Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit seven propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the department. (See department secretary for suggested format and instructions.) The student will be examined orally on at least three of the seven acceptable propositions by the three members of the propositions committee plus two additional faculty members.

Admission to Candidacy. To be admitted to candidacy, the student must have (a) passed at least one foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

Dissertation and Defense. Each student will conduct an original investigation. *It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy.* With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the chairman of the department. It will consist of at least three staff members headed by the student's permanent adviser. This committee must approve the candidate's subject of research, will guide his research activities toward the doctoral dissertation and, in addition, will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his work and its significance during an examination in defense of the dissertation.

Courses of Instruction

BIOLOGY 101a. General and Comparative Physiology of Animals

After an introduction to acquaint students with current experimental findings using animal cells and tissues, the course will turn to an intensive comparison of physiological processes operating in both invertebrates and vertebrates. Particular emphasis will be placed on co-ordinating and integrating mechanisms.

Prerequisites: Chemistry 25, Biology 31b (may be taken concurrently).

Three classroom and three laboratory hours a week. 4 credits.

Laboratory fee: \$15

Mr. Olsen

BIOLOGY 101b. Comparative Physiology of Plants*

A discussion of those areas of physiology and biochemistry to which plants lend themselves as experimental objects. Conspicuous examples are photosynthesis, photomorphogenesis, nitrogen fixation, and the biosynthesis of natural products such as anthocyanins, flavonoids, isoprenoids, phenols, terpenes, etc.

Prerequisites: Chemistry 25, Biology 31b (may be taken concurrently).

Three classroom hours a week. *3 credits.*

BIOLOGY 103b. Physical Basis of Cell Function

Implications of the physical parameters of cellular organization in the biochemical activities of cells. Starting from the properties of elements and water, there will be an examination of the interrelations of structure and function at the levels of (1) metabolic geography, (2) cellular activity, and (3) genetic control.

Prerequisites: Biology 30a, 31b; Physics 10 or 11; Chemistry 10 and 25.

Three classroom hours a week. *3 credits.*

Staff

BIOLOGY 105b. Invertebrate Physiology*

This course will deal with a comparative study of the physiology of receptor-effector and regulatory systems in the invertebrate animals. Nervous, digestive, endocrine, muscle, osmoregulatory, respiratory and circulatory functions will be considered.

Two lectures and six laboratory hours per week. *4 credits.*

Laboratory fee: \$15.

BIOLOGY 106b. Developmental Plant Biology*

The physiology and biochemistry of morphogenetic events in the life cycle of higher plants. Differentiation and growth of organs examined in terms of changing metabolic patterns. Results of modern experimental approaches such as cell, tissue and organ culture and radiation studies will be evaluated.

Prerequisites: Biology 31b (may be taken concurrently), Biology 10.

Three classroom and three laboratory hours a week. *4 credits.*

Laboratory fee: \$15.

BIOLOGY 111b. Microbial Genetics

Fundamental principle of genetics as exemplified by modern research with microorganisms. Some informal laboratory experiments may be included.

Prerequisites: Genetics 30a, or its equivalent; some background in microbiology equivalent to Biology 32a is advisable, but not required.

Three classroom hours a week. *3 credits.*

Mr. Kelner

BIOLOGY 112a. Population Genetics

The study of natural and laboratory populations from the standpoint of gene frequencies. Selection, mutation and migration pressures and resulting equilibria. Genetic population models and the analysis of data.

Prerequisite: Biology 30a.

Three classroom hours.

Mr. Schaffer

*Not to be given in 1966-67.

BIOLOGY 113b. Mathematical Genetics*

Deterministic and stochastic models in genetics including models of population growth. Analysis of the genetic basis of quantitative traits. Applications of computers to the study of genetics.

Prerequisite: Biology 112a.

Three classroom hours.

BIOLOGY 120b. Advanced Microbiology*

Enrichment and isolation of representative bacteria. Discussion of the biology of these forms.

Prerequisites: Biology 31b, 32a; Chemistry 25.

Two classroom hours, four laboratory hours a week. *4 credits.*

Laboratory fee: \$15.

BIOLOGY 124a. Virology

Biology of plant, animal and bacterial viruses.

Prerequisites: Biology 32a or the equivalent.

Three classroom hours.

Mr. Epstein

BIOLOGY 131b. Problems in Animal Morphogenesis

A discussion of problems concerning mechanisms of development of multicellular animals. The classical experiments of embryology will be re-evaluated in light of recent advances made with modern approaches.

Three classroom hours. Laboratory to be arranged. *4 credits.*

Laboratory fee: \$15.

Mr. Zwilling

BIOLOGY 141b. Physical Biology*

Physical methods; treatment of experimental data; physical aspects of vision and hearing; introduction to radiobiology and theoretical biology; forces involved in biological events.

Prerequisite: Satisfactory grades in full year courses in biology, chemistry, mathematics, and physics.

Three classroom hours.

BIOLOGY 150 or 150a and b. Physical and Mathematical Bases of Molecular Biology*

The application of principles of physics, physical chemistry and mathematics to problems of biological interest including thermodynamics, kinetics, photochemistry, radiochemistry, statistics and related numerical methods.

Prerequisites: Mathematics through calculus, some acquaintance with physics and physical chemistry. Students are advised to consult the instructor regarding prerequisites.

Three classroom hours each semester. *3 credits each semester.*

BIOLOGY 200b. Comparative Physiology*

The physiological and biochemical distinctions among living organisms will be presented and the origins of these differences will be discussed from the viewpoint of biochemical evolution. An attempt will be made to define basic metabolic processes common to all organisms as well as the evolution of special pathways in certain groups.

Three classroom hours.

*Not to be given in 1966-67.

BIOLOGY 202a. Gene Structure and Function*

The development of the gene concept. Contemporary investigations of the nature of genetic material and its involvement in cell structure and function.

Prerequisite: Biology 30a.

Three classroom hours. 3 credits.

BIOLOGY 204b. The Cellular Basis of Development

Phenomic variation and interaction at the cellular level will be considered. Developmental events in microbial cultures, morphogenetically complex Protista, Metazoa and Metaphyta will be analyzed in terms of the cellular mechanisms involved.

Three classroom hours. 3 credits.

Mr. Sussman

BIOLOGY 212a. Cytogenetics*

Correlation of genetic data with chromosomal aberration. Study of classical methods and recent findings.

Prerequisites: Biology 103b and 202a.

Three classroom hours. Laboratory to be arranged. 4 credits.

Laboratory fee: \$10.

BIOLOGY 214b. Experimental Methods in Microbial Genetics*

Introduction to the study of microbial variations, including spontaneous and induced mutations; recombination, transduction and other phenomena, using bacteria and bacterial viruses.

Laboratory hours to be arranged.

Laboratory fee: \$20.

BIOLOGY 222b. Microbial Metabolism*

Nutrition and intermediary metabolism of microorganisms.

Prerequisite: Biochemistry 100a or the equivalent.

Three classroom hours.

BIOLOGY 223b. Experimental Methods in Microbial Metabolism*

An introduction to specialized techniques as applied to the study of microbial metabolism, including manometry, chromatography, spectrophotometry, tracer techniques, etc.

Laboratory hours to be arranged.

Laboratory fee: \$20.

BIOLOGY 245a. Selected Topics in Plant Metabolism

Three classroom hours a week. 2 credits.

Mr. Schiff

BIOLOGY 245b. Selected Topics in Plant Metabolism

Three classroom hours a week. 2 credits.

Mr. Klein

BIOLOGY 300a and b. Biological Research

Primarily for the first year student with the purposes of introducing him to biological research and to the work in progress in the laboratories of a number of faculty members. In consultation with the graduate adviser, the student plans a sequence of such tenures, each comprising six weeks or more, and then carries out experimental investigations under the guidance of the faculty members involved.

Credits to be arranged.

Mr. Fulton and Staff

*Not to be given in 1966-67.

- BIOLOGY 400. Research in Genetics and Microbiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Epstein*
- BIOLOGY 401. Research in Genetics and Microbiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Kelner*
- BIOLOGY 402. Research in Population Genetics and Mathematical Genetics
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Schaffer*
- BIOLOGY 403. Research in Microbial Genetics
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Gillespie*
- BIOLOGY 404. Research in Physiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Olsen*
- BIOLOGY 405. Research in Invertebrate Development
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Fulton*
- BIOLOGY 406. Research in Plant Physiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Schiff*
- BIOLOGY 407. Research in Invertebrate Physiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Oberlander*
- BIOLOGY 408. Research in Differentiation and Genetics
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Sussman*
- BIOLOGY 409. Research in Vertebrate Development
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Zwilling*
- BIOLOGY 410. Research in Plant Physiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. A. O. Klein*
- BIOLOGY 411. Research in Electron Microscopy*
Laboratory hours and credits to be arranged.
Laboratory fee: \$25.
- BIOLOGY 412. Research in Plant Metabolism
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Gibbs*

*Not to be given in 1966-67.

BIOLOGY 413. Research in Vertebrate Physiology

Laboratory hours and credits to be arranged.

Laboratory fee: \$25.

Mr. Szent-Gyorgyi

Biology Journal Clubs

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialties. These will meet regularly under the auspices of staff members. Students, depending upon their individual needs, may be required to attend.

Biophysics**Objectives**

The interdepartmental graduate program in biophysics, leading to the degree of Doctor of Philosophy, is designed to give the student a broad understanding of the physico-chemical nature of living processes and to train him to carry out independent research. In addition to basic courses in cellular biology, the student will be expected to obtain a broad background in the supporting disciplines of biochemistry, biology, chemistry, physics, and mathematics. After completion of this program, the student's remaining course work will be in an area of biophysics in which a faculty member is doing research. Some areas in which research is now being actively pursued are photobiology, radiobiology, virus reproduction and muscle contraction.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to applicants for admission to this area of study. Applicants are also required to take the Graduate Record Examination. The student's undergraduate program should, ideally, include organic and physical chemistry, atomic and nuclear physics, differential equations, and courses in cellular biology. Inasmuch as most students will be deficient in some respects, it is expected that deficiencies may be made up by taking the appropriate courses while in Graduate School. If a petition is approved, the successful completion of some of these courses may be credited as part of the graduate program. On being admitted to study in biophysics, the student will be assigned to a member of the Biophysics Committee, who will advise the student on a program of courses. This program should be submitted for approval to the committee by the beginning of the second term of residence.

Faculty

Associate Professor KENNETH KUSTIN (Chemistry) *Chairman*; Professors NATHAN O. KAPLAN (Biochemistry), ALBERT KELNER (Biology), HENRY LINSCHITZ (Chemistry), EDGAR LIPWORTH (Physics), ANDREW G. SZENT-GYORGYI (Biology); Assistant Professor THOMAS C. HOLLOCHER, JR. (Biochemistry).

Degree Requirements

Doctor of Philosophy

Program of Study. The following are five areas in which competency at more than a minimal level is expected of a candidate for a Ph.D. in Biophysics:

1. Biology—competency to include at least one area of biology in which the candidate could be presumed to be capable of doing independent work.
2. Modern physics through the basic ideas of quantum mechanics.
3. Physical chemistry including thermodynamics.
4. Biochemistry.
5. Mathematics through elementary differential equations.

Language Requirements. A reading knowledge of German and French is required. Russian may be substituted for one of these languages if the advisory committee determines that it is useful for a student in his particular field of research.

Qualifying Examination. A student should have completed the program of study not later than the end of his second year in residence so that he may be able to take a qualifying examination covering this material.

Dissertation and Defense. Upon passing this examination, the student will select a dissertation supervisor and formally initiate research and course study in the research area of his supervisor. An additional twelve credits are to be taken from among the courses listed above or from other graduate courses and seminars as approved by the student's advisory committee. This committee will be appointed by the dissertation supervisor, subject to the approval of the Biophysics Committee. When the student and the dissertation supervisor have agreed on the research project, a brief description of the project must be filed with each of the members of the advisory committee.

After completing the research and the dissertation, the candidate will present and discuss the results and significance of his work during an examination in defense of his dissertation.

Courses of Instruction

BIOPHYSICS 300a and b. Biophysical Techniques

All entering students normally register for this course and will thereby participate for periods of about six weeks in the research programs of each of the six to eight staff members.

Staff

Chemistry

Objectives

The graduate program in chemistry is designed to lead to a broad understanding of this subject. All students will be required to demonstrate knowledge in advanced areas of inorganic, organic and physical chemistry. They will be required also to demonstrate proficiency in selected experimental techniques which are used in chemical research. Advanced courses in chemistry are offered, satisfactory completion of which may constitute partial fulfillment of these requirements. Advanced courses in biochemistry, mathematics, physics, and biology may be offered to fulfill degree requirements with prior consent of the Departmental Committee on Graduate Studies. Members of the chemistry staff are currently investigating mechanisms of organic reactions, chemistry of free radicals, stereochemistry and molecular geometry, chemistry of organophosphorus compounds, mechanisms of enzyme reactions, structure and biogenesis of natural products, quantum chemistry, chemical kinetics of elementary reactions, statistical theory of atomic and molecular structure, theory of fluids, irreversible processes, photochemistry, mechanisms of photosynthesis, ultra-fast proton transfer steps in acid base reactions; dispersion forces between adjacent molecules in liquids; lifetimes of hydrogen-bonded complexes in solution, solid state chemistry, electron paramagnetic resonance, rapid reactions by relaxation spectrometry, structure of organic and inorganic compounds by X-ray diffraction, kinetics of reactions in the gas phase.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the undergraduate curriculum of applicants should include courses in physics and mathematics (differential and integral calculus), and courses in general and inorganic, analytical, organic and physical chemistry.

Admission to advanced courses will be based upon results of a qualifying examination in each of these areas of chemistry, which will be taken

upon entrance. These examinations will determine whether the student will be required to make up deficiencies in preparation. The qualifying examinations will be given three times a year; (1) during the two-week period ending with the first week of the Fall Term, (2) in February, and (3) in April. The results of the qualifying examinations will be considered in the assignment of awards for the subsequent years of graduate study.

Faculty

*Professor SAUL G. COHEN, *Chairman*: Chemistry of free radicals; organic photochemistry; stereospecificity and mechanism of reactions of enzymes.

Professor SIDNEY GOLDEN: Quantum statistical theory of chemical kinetics; many body problems and atomic and molecular structure; statistical mechanics of ion solvation.

Professor ERNEST M. GRUNWALD: Ultra-fast proton transfer steps in acid base reactions; lifetimes of hydrogen-bonded complexes in solution; enthalpy, entropy and heat capacity changes for polar reactions in solution.

Professor JAMES B. HENDRICKSON: Chemistry of natural products, particularly alkaloids and sesquiterpenes; chemical plant phylogeny; stereochemistry and molecular geometry; development of new synthetic reactions.

*Professor HENRY LINSCHITZ: Reactions of excited molecules; stabilization of free radicals; photo-ionization in solution and properties of solvated electrons; metal complexes; physical mechanisms of photobiological processes.

Professor MYRON ROSENBLUM: Reaction mechanisms; thermally induced rearrangements; the chemistry of ferrocene and related compounds.

Professor ROBERT STEVENSON: Isolation and structure of natural products; lignan synthesis; molecular rearrangements in triterpenoids and steroids.

Associate Professor PAUL B. DORAIN: Electron paramagnetic resonance; exchange interactions and optical spectra of crystalline materials.

Associate Professor KENNETH KUSTIN, (*Graduate Student Adviser*): Study of fast reactions in solution by relaxation techniques; mechanisms of inorganic reactions; enzyme kinetics.

Associate Professor COLIN STEEL: Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.

*On Leave, Spring Term, 1966-67.

ASSOCIATE PROFESSOR THOMAS R. TUTTLE, JR.: Electron distribution in ion radicals by electron spin-resonance; molecular motions in solutions; properties of metal solutions in ammonia and other solvents.

ASSISTANT PROFESSOR ROBERT F. HUTTON: Chemical models for enzymatic reactions; nuclear magnetic resonance spectroscopy.

ASSISTANT PROFESSOR PETER C. JORDAN: Irreversible statistical mechanics and quantum chemistry.

ASSISTANT PROFESSOR THOMAS N. MARGULIS: Structure of organic and inorganic compounds by X-ray diffraction.

Degree Requirements

Master of Arts

Qualifying Examinations. The qualifying examinations must be passed by the end of the first year of graduate study.

Program of Study. Each candidate for the Master's degree is required to complete satisfactorily:

1. Not less than *eighteen semester hours of lecture course work* in inorganic, organic and physical chemistry. Graduate courses in related fields may be offered to fulfill the chemistry requirements on petition to the department. The petition must be approved prior to registration for such courses.

2. *Six semester hours of advanced laboratory work.* This requirement may be met by graduate credit in laboratory work in courses numbered over 100.

3. Chemistry 110b, 121a, 130a may be offered in partial fulfillment of lecture course requirements or of laboratory course requirements for the M.A. degree.

Residence Requirement. The minimum residence requirement for this degree is one year. While generally this will be fulfilled in two semesters and one summer, it may in certain instances be met in two semesters.

Language Requirements. A reading knowledge of German and an elementary knowledge of French or Russian is required.

Doctor of Philosophy

Program of Study. Each candidate for the Doctor's degree is required to complete satisfactorily:

1. The qualifying examinations which must be passed at a level satisfactory for this degree by the end of the first year of graduate study.

2. The program of study described for the degree of Master of Arts in Chemistry, or its equivalent.

3. Not less than nine additional semester hours of lecture course work in Chemistry selected from those in the 200 series.

4. Final examinations. After a student has been admitted to the Ph.D. program he begins to take final examinations in his major field, organic, physical or inorganic chemistry. In organic chemistry these examinations are administered twice a year, and are based on assigned readings. Students must pass three of these examinations and must maintain satisfactory progress toward this end. In physical chemistry, generally during the third semester of graduate work, the student is assigned a set of four propositions. He takes a written examination on one proposition and is examined orally on the remaining three. The student is graded on his overall performance on both parts of the examination. In inorganic chemistry the student takes a general written examination in this area and an oral examination on his proposed research.

Residence Requirements. The minimum residence requirement for this degree is two years. Ordinarily, three years of full-time study will be necessary for the completion of the course work and the preparation of an acceptable thesis.

Language Requirements. A reading knowledge of German and either French or Russian is required.

Admission to Candidacy. The student may be recommended for admission to candidacy upon the recommendation of his dissertation adviser, and the completion of the following requirements: the qualifying examinations, twenty-one hours of graduate lecture course credit, the language examinations and one final examination.

Dissertation and Defense. A thesis is required which summarizes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability, and effectiveness of expression. The topic of the thesis must receive approval of the department. An oral defense of the dissertation will be held.

Courses of Instruction

CHEMISTRY 110b. Analytical Chemistry

Principles and techniques involved in modern chemical analysis. Application of modern instrumental methods to the study of chemical and physical processes. Techniques used include polarography, spectroscopy, chromatography.

Prerequisites: Chemistry 41.

Two classroom and six laboratory hours a week. *4 credits.*

Laboratory fee: \$10.

Mr. Steel

CHEMISTRY 121a. Inorganic Chemistry I

Introduction to the principles of chemical binding; valence theory, periodic properties, molecular structures. Application chiefly to the chemistry of the lighter and non-metallic elements.

Inorganic synthesis and analysis; synthetic techniques include vacuum line, high temperature, non-aqueous and electrochemical preparations. Instrumental methods of analysis.

Graduate students may take the lectures of this course without the laboratory.

Prerequisites: Chemistry 41 or consent of the instructor.

Three classroom hours a week, 3 credits; six laboratory hours a week, 2 credits.

Laboratory fee: \$10.

Mr. Kustin

CHEMISTRY 122b. Inorganic Chemistry II

A continuation of the lecture part of Chemistry 121a, dealing with the transition metal, rare earth and actinide elements.

Mr. Dorain

CHEMISTRY 123b. Nuclear Chemistry

Nuclear reactions, radioactive decay, interaction of radiation and matter, applications of isotopic tracer methods.

To be announced

CHEMISTRY 130a. Introduction to Organic Research

Techniques of organic analysis and synthesis, with emphasis on the use and interpretation of modern instrumental methods including optical and magnetic spectroscopy.

Prerequisite: Chemistry 25, or equivalent.

Two classroom hours and two three-hour laboratory periods a week, 4 credits.

Laboratory fee: \$10.

Mr. Rosenblum

CHEMISTRY 131a. Advanced Organic Chemistry

Stereochemistry, molecular rearrangements, kinetics and mechanisms of organic reactions.

Prerequisites: Satisfactory grades in Chemistry 25 and 41 or the equivalent. Chemistry 41 may be taken concurrently.

Mr. Cohen

CHEMISTRY 132b. Synthetic Methods

A survey of several newer organic reactions of theoretical and synthetic interest including a discussion of their application, scope, specificity and mechanism.

Prerequisites: Satisfactory grade in Chemistry 131a or the equivalent.

Mr. Rosenblum

CHEMISTRY 141a. Advanced Physical Chemistry

A unified introduction to chemical thermodynamics, statistical mechanics and elementary wave mechanics.

Prerequisite: Chemistry 41 or equivalent.

Mr. Jordan

CHEMISTRY 141b. Advanced Physical Chemistry

Continuation of Chemistry 141a.

Prerequisite: Satisfactory grade in Chemistry 141a.

Mr. Jordan

CHEMISTRY 144b. Structure Determination of Crystals and Molecules*

Methods of molecular and crystal structure determination. Emphasis is placed on the techniques which provide direct determinations of bond lengths, including X-ray, neutron and electron diffraction, and microwave spectroscopy.

Prerequisite: Chemistry 41 or the equivalent.

CHEMISTRY 145a. Chemical Kinetics

Kinetics of homogeneous and heterogeneous chemical change.

Prerequisite: Satisfactory grade in Chemistry 41 or equivalent. *Mr. Steel*

CHEMISTRY 200. Advanced Chemistry Laboratory

Staff

CHEMISTRY 220c. Inorganic Chemistry Seminar

A seminar course. Required of graduate students in inorganic chemistry who must audit this course each year and may receive three credits after participating for two years and presenting two seminars.

To be announced

CHEMISTRY 221b. Advanced Inorganic Chemistry I

Inorganic reaction mechanisms: Substitution, exchange, polymerization, redox, hydrolytic and solvolytic reactions; inorganic stereochemistry.

Prerequisite: Chemistry 145a. *Mr. Kustin*

CHEMISTRY 222b. Advanced Inorganic Chemistry II*

Theoretical inorganic chemistry: Atomic structure and the application of group theory to inorganic compounds, particularly the transition metals; ligand field theory.

Prerequisites: Chemistry 141a;

Corequisite: Chemistry 141b.

Chemistry 221b and Chemistry 222b are given in alternate years.

CHEMISTRY 229b. Special Topics in Inorganic Chemistry*

The content will depend on the interests of the instructor. This course will not be given in 1966-67.

CHEMISTRY 230b. Advanced Organic Chemistry

A continuation of Chemistry 131a.

Prerequisite: Satisfactory grade in Chemistry 131a. *Mr. Cohen*

CHEMISTRY 231c. Organic Chemistry Seminar

Required of graduate students in organic chemistry who must audit this course each year and may receive three credits after participating for two years and presenting two seminar talks.

Messrs. Hendrickson and Stevenson

CHEMISTRY 232b. Chemistry of Heterocyclic Compounds*

A systematic survey of the principal oxygen, nitrogen and sulfur heterocycles of five and six membered and fused ring systems, including their synthesis, chemical reactions and aromatic character.

Prerequisite: Satisfactory grade in Chemistry 131a.

*Not to be given in 1966-67.

CHEMISTRY 233b. Chemistry of Alkaloids*

Study of principal alkaloids belonging to the pyrrolidine, piperidine, pyrrolizidine, quinolizidine, quinoline, isoquinoline and indole groups, including degradation, total synthesis and biogenetic relationships.

Prerequisite: Satisfactory grade in Chemistry 132b.

CHEMISTRY 235a. Special Topics in Organic Chemistry

Organic photochemistry. Survey of recent reactions of synthetic interest and of molecular rearrangements produced by photo-irradiation of organic compounds.

Prerequisite: Chemistry 130a, 131a, or consent of instructor. *Mr. Stevenson*

CHEMISTRY 237b. The Chemistry of Natural Products

Isolation, structure elucidation, degradation, synthesis and classification of selected classes of natural products.

Prerequisites: Chemistry 130a, 131a, or consent of the instructor.

Mr. Stevenson

CHEMISTRY 241c. Physical Chemistry Seminar

Required of graduate students in physical chemistry who must audit this course each year and may receive three credits after participating for two years and presenting two seminar talks.

Messrs. Linschitz and Steel

CHEMISTRY 243b. Statistical Thermodynamics

Elementary statistical mechanics of systems in equilibrium; Boltzmann, Fermi-Dirac and Bose-Einstein statistics; microcanonical, canonical and grand canonical ensembles; applications to thermodynamic systems.

Mr. Jordan

CHEMISTRY 244b. Special Topics in Physical Chemistry

To be announced

CHEMISTRY 245b. Physical Organic Chemistry*

A quantitative discussion of rates and equilibria of organic reactions.

CHEMISTRY 247a. Quantum Chemistry

Quantum mechanics and applications to problems in atomic and molecular structure and chemical binding.

Mr. Golden

CHEMISTRY 248b. Topics in Quantum Theory***Courses in Research****CHEMISTRY 400. Organic Chemistry and Physical Organic Chemistry**

Reaction mechanisms; free radicals; photochemistry; enzyme reactions.

Mr. Cohen

CHEMISTRY 401. Organic Chemistry

Chemistry of natural products; steroids, triterpenoids, lignans. *Mr. Stevenson*

CHEMISTRY 402. Organic Chemistry**CHEMISTRY 403. Organic Chemistry**

Non-benzenoid aromatics; molecular rearrangements; reaction mechanisms; organometallics.

Mr. Rosenblum

*Not to be given in 1966-67.

CHEMISTRY 404. Organic Chemistry

Chemistry of natural products; stereochemistry and molecular geometry; development of new synthetic reactions. *Mr. Hendrickson*

CHEMISTRY 405. Physical Chemistry

Chemical kinetics of elementary reactions; statistical theory of atomic and molecular structure; statistical mechanics of electrolytic solutions; physical chemistry of metal-ammonia solutions. *Mr. Golden*

CHEMISTRY 406. Physical Chemistry

Reactions of excited molecules; luminescence; electron solvation; metal complexes; physical mechanisms of photobiological processes. *Mr. Linschitz*

CHEMISTRY 407. Physical and Inorganic Chemistry

Electron paramagnetic resonance; solid state chemistry. *Mr. Dorain*

CHEMISTRY 408. Physical Chemistry

Electron spin resonance; structure of free radicals; diffusion in liquid solutions; chemistry of electrolytic solutions. *Mr. Tuttle*

CHEMISTRY 409. Inorganic Chemistry

Kinetics and mechanisms of inorganic reactions; experimental study of fast reactions including enzyme catalysis by the temperature-jump and other relaxation techniques. *Mr. Kustin*

CHEMISTRY 410. Physical and Inorganic Chemistry

Structure of organic and inorganic compounds by X-ray diffraction. *Mr. Margulis*

CHEMISTRY 411. Physical Chemistry

Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions. *Mr. Steel*

CHEMISTRY 412. Physical and Physical Organic Chemistry

Ultra-fast proton transfer steps in acid base reactions; enthalpy, entropy and heat capacity changes for polar reactions; lifetimes of hydrogen-bonded complexes in solution. *Mr. Grunwald*

CHEMISTRY 413. Physical Chemistry

Statistical mechanics; irreversible processes; theory of fluids; quantum chemistry. *Mr. Jordan*

Chemistry Colloquium

Lectures by faculty and invited speakers. Required of all graduate students. *Non-credit.*

Contemporary Jewish Studies

Objectives

The graduate program in Contemporary Jewish Studies offers training on the Master of Arts level in various disciplines relating to the history, soci-

ology and literature of contemporary Jewry. It is designed both for students who intend to devote themselves to teaching and research in contemporary Jewish studies and for those who plan careers in the field of Jewish communal and educational service.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Contemporary Jewish Studies program.

Faculty Executive Committee

MR. LEON A. JICK, *Chairman*: Lecturer, Near Eastern and Judaic Studies
Associate Professor BARUCH A. LEVINE, *Vice Chairman*: Near Eastern and Judaic Studies

Professor ALEXANDER ALTMANN: Near Eastern and Judaic Studies

*Professor NAHUM NORBERT GLATZER: Near Eastern and Judaic Studies

Professor VICTOR HARRIS: English and American Literature

Visiting Professor OSCAR JANOWSKY: History and Contemporary Jewish Studies

Professor ROBERT A. MANNERS: Anthropology

Professor ABRAHAM H. MASLOW: Psychology

Professor ROBERT MORRIS: Social Planning

**Professor MORRIS S. SCHWARTZ: Sociology

Professor HAROLD WEISBERG: Philosophy

Associate Professor ARNOLD GURIN: Social Administration

Associate Professor BENJAMIN HALPERN: Near Eastern and Judaic Studies

Assistant Professor ERICH GOLDHAGEN: Politics

**Assistant Professor B. SVI SOBEL: Sociology

Degree Requirements

Master of Arts

Program of Study. The program of study leading to the degree of Master of Arts will consist of a minimum of four half-courses each term and two master's papers in lieu of a thesis. It is expected that the Master of Arts degree will be earned in two years, but in special instances, one year will suffice. Normally, students will find it necessary to accomplish more than four full courses in order to insure adequate preparation for the degree.

*On Leave, Spring Term, 1966-67.

**On Leave, 1966-67.

Residence Requirement. The minimum residence requirement for the Master of Arts degree is one year.

Language Requirement. A candidate must demonstrate a basic knowledge of Hebrew which can, if necessary, be accomplished by successful completion of one year's study of Hebrew at Brandeis.

Courses of Instruction

CJS 103a. The Sociology of Religion*

Sociological analysis of contemporary and historical religious institutions and experiences. Religious leaderships and followerships; conversion; sect, denomination and church; religion, society and politics; leading contemporary schools of theology.

CJS 105b. The Sociology of Modern Anti-Semitism*

Sociological analyses of contemporary forms of anti-Semitism. Various theories, both past and present, attempting to explain the phenomenon will be critically examined.

CJS 110b. Jewish Education: Applied Theory

A course intended for persons interested in the theoretical aspects of Jewish education—the learning process, the presentation of pre-modern material, structure and the role of discovery. The course is organized as a seminar. *To be announced*

CJS 115b. The Sociology of the American Churches*

The major sociological and theological characteristics of the American churches; church membership and church organization; the relationship of the churches to the power structure and to each other; Catholics and Jews; the “majority” churches in a pluralistic society.

CJS 126b. History of the Jews in Modern Times*

The emancipation of the Jews in western Europe; the Haskalah movement. The great migrations to the West. Renaissance of Hebrew culture. Anti-semitism. Zionism. Problems of contemporary Jewish life in the United States.

CJS 144a. Political Modernization in the Near East

See N.E.J.S. 144a for description.

Mr. Halpern

CJS 145a. General Survey of the Near Eastern Peoples

See N.E.J.S. 145a for description.

Mr. Levy

CJS 149b. History of Palestine and Contemporary Israel

See N.E.J.S. 149b for description.

Mr. Halpern

CJS 162. Problems in American-Jewish History

A seminar in certain problem areas in American-Jewish historical research such as: immigrant movements to the U.S., the coherence of Jewish reactions to political and religious problems, the religious and the secular.

Mr. Jick

*Not to be given in 1966-67.

CJS 166b. Modern Jewish Intellectual History Since 1870

See N.E.J.S. 166b for description.

Mr. Halpern

CJS 170b. The Contemporary American Jewish Community

Survey of Jewish organizational activity in the United States and Canada. Structure and functions of religious and philanthropic institutions. Patterns of co-ordination and community planning. Interrelationship of local, national, and international programs. Trends and problem issues in regard to demographic changes, Jewish identification, rationale for sectarian services, inter-group relations, financing.

Mr. Levine

CJS 180. Jewish Education in America: An Historical and Institutional Study

A study of the origins and development of Jewish education with emphasis on the relationship of Jewish education to other aspects of community organization and its role in Jewish life. Educational issues will be discussed from an historical and sociological point of view rather than from a philosophical perspective.

Mr. Janowsky

CJS 201a. The Destruction of European Jewry

A seminar which will explore the events leading up to a holocaust, archival material from the period of the holocaust itself, contemporary reactions, and a socio-historical inquiry into the causes of this dark period.

Mr. Goldhagen

CJS 215a. Demography and Human Ecology

This course offered by the Florence Heller School will deal with the areas of fertility, population changes, bio-social variables, Jewish population trends, urban structure, statistics and the relation of human ecology to demography.

Mr. Lazerwitz

CJS 23b. Philosophy of Education

Significant tendencies in educational thought. An analysis of classical and contemporary philosophical models of the educational process as related to problems of knowledge, value, human nature, and social theory. Reading and discussion of current social and educational criticism.

Mr. Reitzes

English and American Literature

Objectives

The graduate program in English and American literature is designed to offer training in the interpretation and evaluation of literary texts with some attention to the related scholarly disciplines, particularly history and linguistics. It also offers for candidates who have some ability in writing an opportunity to pursue this interest as a normal part of the graduate program.

Admission

Candidates for admission should have a Bachelor's degree, preferably with a major in English and American literature, and a reading knowledge of French, Italian, German, Greek, or Latin. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Faculty

Professor ROBERT O. PREYER, *Chairman*: Victorian literature.

*Professor J. V. CUNNINGHAM: Renaissance literature. Creative writing.

Professor VICTOR HARRIS: Seventeenth century literature.

Professor MILTON HINDUS: American literature. Contemporary literature.

Professor LOUIS KRONENBERGER: Comparative literature.

Professor HOWARD NEMEROV: Contemporary literature. Creative writing.

Professor EDWIN B. PETTET: Dramatic criticism.

Professor PHILIP RAHV: American literature. Criticism.

*Professor AILEEN WARD: Nineteenth century literature.

**Associate Professor BENJAMIN B. HOOVER: Eighteenth century literature.

*Associate Professor JOHN H. SMITH: Renaissance literature.

Associate Professor PETER SWIGGART: American literature.

Assistant Professor SACVAN BERCOVITCH: American literature.

Visiting Assistant Professor ARTHUR EDELSTEIN: American literature.

***Assistant Professor BARBARA GELPI: Victorian literature.

Assistant Professor ALLEN GROSSMAN: Contemporary literature. American literature.

Assistant Professor S. JAY KEYSER: Linguistics. Medieval literature.

*Assistant Professor IRA KONIGSBERG: English novel. Eighteenth century literature.

Assistant Professor ALAN LELCHUK: Victorian literature.

Assistant Professor ALAN LEVITAN: Renaissance literature.

Assistant Professor RICHARD ONORATO: Romantic literature.

Visiting Assistant Professor ELIZABETH ORSTEN: Medieval literature.

Dr. JOHN BURT WIGHT: Teacher training.

Dr. KAREN W. KLEIN: Medieval literature. Linguistics.

Dr. GERTRUDE L. GRAVES: Romantic literature.

Degree Requirements

Master of Arts

Program of Study. The program of study leading to the degree of Master of Arts will consist of six half-courses (three a semester), and preparation for the Ph.D. qualifying examination (290a and b). The six half-courses will normally include Introduction to Literary Study; at least one seminar a semester; Old English, Middle English, or History and Structure

*On Leave, 1966-67.

**On Leave, Fall Term, 1966-67.

***On Leave, Spring Term, 1966-67.

of the English Language; and may include a half-course in advanced writing. Students who are deficient in training will, however, in most cases need additional course work.

Residence Requirement. The minimum residence requirement is one year, though students with inadequate preparation may require more.

Language Requirements. Each student must have a reading knowledge of a major European language, ancient Greek, or Latin.

Qualifying Examinations. The student will enroll for English 290a and b and must pass the written part of the Ph.D. qualifying examination (see below) on the Master's level.

Doctor of Philosophy

Program of Study. The program of study in the second year of graduate work will consist of six half-courses. These normally will include at least two seminars, the English Seminar (301a or b), and may include a half-course in advanced writing. The program in the third year of doctoral study will normally consist of 321a and b, 322a and b, and in most cases 311. Students who are deficient in training may require more formal course work.

Language Requirements. Each student must have a reading knowledge of two languages. He may choose to be examined in any major European language, ancient Greek, and Latin.

Residence Requirement. The minimum residence requirement is one year beyond the Master's degree or two years beyond the Bachelor's, but students will normally take three or four years.

Qualifying Examinations. During his first year of graduate study at Brandeis, the student will take English 290a and b, which will prepare him for the Ph.D. qualifying examinations. The examination will consist of two parts, one written and one oral. The written part will test the student's ability to interpret and evaluate a number of major texts distributed over the various kinds and periods of English and American literature. If the student's performance is satisfactory for Ph.D. qualification, he will take the oral examination within two weeks. During the oral, the student will be questioned about the test paper and further examined on the reading list. Both parts of the qualifying examination will be scheduled in May and September.

Field Examinations. During his third year of graduate study, the student must pass examinations on four fields of English and American literature (321a and b, 322a and b). Three of these will be written examinations on a limited number of major authors in fields in which the student's formal training has been deficient. The fourth will be an oral on the student's entire field of specialization: the student will be writing his dis-

sertation in this field and may specialize in a period of English or American literature, modern English and American literature, or the history of a genre. These examinations will be given on specified dates during the university examination periods in the Fall and Spring Terms.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has (1) completed residence requirements, (2) passed the qualifying examinations for the Ph.D. degree, (3) passed one foreign language, and (4) presented his public lecture.

Dissertation and Defense. The dissertation may be an extended study, a series of closely related essays, a bibliographical project, or a textual project. A candidate will explore with a member of the faculty his proposed dissertation. He will submit a formal proposal, approved by the faculty member, to the Chairman of the department who will appoint a committee which will accept, modify, or reject the proposal. Generally, the adviser for the proposal will be chairman of the committee and will direct the student during the writing of the dissertation. Finally, the candidate must submit to the university a dissertation in a form approved by the committee, and must defend it at a final oral examination.

Courses of Instruction

In addition to the following courses, graduate students in English and American Literature, with the permission of the chairman of the department, may take for credit any Humanities and Comparative Literature courses in the 100 series. For description of such courses refer to the undergraduate catalog.

ENGLISH 121a. Old English

An introduction to Old English grammar, with special attention to the rapid attainment of skill in reading. Texts of prose and the shorter poems will be read in the first semester.

Mrs. Klein

ENGLISH 121b. Old English

A study of *Beowulf*.

Miss Orsten

ENGLISH 122b. Medieval Literature: A Thematic Study of Piers Plowman and Other Related Texts

Miss Orsten

ENGLISH 142b. Elizabethan and Jacobean Drama

A survey of English drama from 1590 to 1640.

Mr. Levitan

ENGLISH 145b. English Religious Poetry in the Seventeenth Century

A study of the religious poetry of Donne, Herbert, Vaughan, Traherne, Crashaw, Marvell, and including the early poems of Milton.

Mr. Grossman

ENGLISH 150b. The Classical Background of English Literature*

*Not to be given in 1966-67.

ENGLISH 155b.	Romantic Poetry	<i>Mr. Onorato</i>
ENGLISH 172a.	The Nineteenth Century Novel	<i>Mr. Lelchuk</i>
ENGLISH 173a.	The Twentieth Century Novel	<i>Mr. Bercovitch</i>
ENGLISH 180a.	Continuity and Change in Modern Literature	<i>Mr. Rahv</i>
ENGLISH 185a.	The Literature of Transition: Classical to Romantic	<i>Mr. Onorato</i>
ENGLISH 187a.	History of Criticism: Plato to Dryden*	
ENGLISH 188b.	History of English Criticism: Criticism Theory	<i>Mr. Swiggart</i>
ENGLISH 191a.	Introduction to Linguistics	<i>Mr. Keyser</i>
ENGLISH 192b.	History and Structure of the English Language	
A study of the linguistic structure of modern English and of the historical processes through which it developed.		<i>Mr. Keyser</i>
ENGLISH 193b.	Advanced Problems in Phonology and Syntax	
<i>Prerequisite:</i> English 191a or permission of instructor.		<i>Mr. Keyser</i>
ENGLISH 201a.	Introduction to Literary Study	<i>Mr. Levitan</i>

Pro-Seminars

Pro-seminars, numbered between 202 and 210, are courses designed for graduate students to enable them to make up deficiencies in various fields and subjects, and prepare them for seminar work.

ENGLISH 204a.	Pro-Seminar in Medieval Literature	
Romance and Allegory: The nature of narrative.		<i>Mrs. Klein</i>
ENGLISH 205b.	Pro-Seminar in Elizabethan Drama	<i>Mr. Harris</i>
ENGLISH 206a.	Pro-Seminar in Eighteenth Century Poetry*	
ENGLISH 207b.	Pro-Seminar in the Nineteenth Century: Romantic Poetry and Criticism*	
A survey of the poetry and criticism of the period, focused on the major poets.		
ENGLISH 208a.	Pro-Seminar in Victorian Prose	<i>Mrs. Gelpi</i>
ENGLISH 209a.	Pro-Seminar in Nineteenth Century American Literature	<i>Mr. Swiggart</i>

Seminars

ENGLISH 212b.	Seminar in the Novel*	
An investigation of the theory and technique of the novel.		
ENGLISH 213b.	Seminar in Criticism	
Literary criticism in America: Poe to Wilson.		<i>Mr. Rahv</i>
ENGLISH 214a.	Seminar in Conventions	
A study of composition and conventions in works ranging from <i>The Tempest</i> to Mann's <i>Dr. Faustus</i> .		<i>Mr. Nemerov</i>

*Not to be given in 1966-67.

- ENGLISH 215a. Seminar in Renaissance Literature
Tudor poetry from Wyatt to Donne and Jonson. *Mr. Levitan*
- ENGLISH 215b. Seminar in Renaissance Literature: Shakespeare *Mr. Levitan*
- ENGLISH 216b. Seminar in the Eighteenth Century Novel: Dr. Johnson and his Circle
Mr. Hoover
- ENGLISH 217a. Seminar in Romantic Poetry: William Blake*
- ENGLISH 217b. Seminar in the Romantic Period *Mr. Onorato*
- ENGLISH 218a. Seminar in the Victorian Novel *Mr. Preyer*
- ENGLISH 219a. Seminar in the American Novel*
Hawthorne, James, and Faulkner.
- ENGLISH 220b. Seminar in the Twentieth Century: Modern Poetry in English, 1909-1946
Mr. Grossman
- ENGLISH 225a. Seminar in Seventeenth Century Literature
The allegorical tradition from Spenser to Bunyan. *Mr. Harris*
- ENGLISH 261a. Seminar in Anglo-Irish Literature*
Yeats, Synge, and Joyce.
- ENGLISH 290a and b. Directed Reading
All students during their first year of graduate study at Brandeis will enroll in this course for two semesters. *Messrs. Onorato and Hindus*
- ENGLISH 301b. The English Seminar
Each student will deliver a fifty minute public lecture.
Required of second year candidates for the doctoral degree.
Messrs. Swiggart and Hoover
- ENGLISH 311. Seminar in Teaching
For Teaching Assistants in English. *Non-credit.* *Mr. Wight*
- ENGLISH 321a and b. Earlier English Literature
Special fields.
Required of third year candidates for the doctoral degree.
Messrs. Levitan and Preyer
- ENGLISH 322a and b. Later English Literature and American Literature
Special fields.
Required of third year candidates for the doctoral degree.
Messrs. Grossman and Swiggart
- ENGLISH 400a and b. Research *Staff*
-
- ENGLISH COMPOSITION 102a and b. Directed Writing: Poetry *Mr. Nemerov*
- HUMANITIES 65b. Existentialism and European Fiction*
Kierkegaard, Sartre, Camus and Kafka.

*Not to be given in 1966-67.

History of American Civilization

Objectives

The graduate program in the History of American Civilization, leading to the degree of Doctor of Philosophy in History, has been designed to train scholars and teachers with both intensity and breadth. Historical in emphasis and organization, the curriculum will reach out into other disciplines such as political science, economics, philosophy, literature, psychology, and sociology for insights and techniques that illuminate the American experience. A small, select student body will work in close cooperation with the faculty, and a great deal of reliance will be placed on the development of individual programs of study.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate curriculum should include some fundamental courses in American history, politics, or literature, but need not show a concentration in American studies. Applicants are required to take the Graduate Record Examination.

Faculty

Executive Committee: Professor JOHN P. ROCHE, *Chairman*; Assistant Professor JEROLD AUERBACH, *Secretary*; Professors RAYMOND S. GINGER, MORTON KELLER, LEONARD W. LEVY, MARVIN MEYERS; Associate Professor DAVID HACKETT FISCHER.

Staff:

*Professor RAYMOND S. GINGER: Economic and social history. Reform movements.

Professor MORTON KELLER: Political history. Entrepreneurial history.

*Professor MAX LERNER: Social institutions. Political economy. Contemporary history.

Professor LEONARD W. LEVY: Constitutional history, the South. Colonial period.

Professor NORTON LONG: Social theory. Urban studies.

Professor MARVIN MEYERS: Intellectual history. The early republic.

Professor PHILIP RAHV: American and comparative literature.

Professor JOHN P. ROCHE: Political theory. Constitutional history. Contemporary history.

Associate Professor DAVID HACKETT FISCHER: Early American history.

Assistant Professor JEROLD AUERBACH: Recent history. Labor history.

*On Leave, Spring Term, 1966-67.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree in History may be awarded after completion of twenty-four course credits, a written comprehensive examination, and demonstration of proficiency in one relevant foreign language.

Doctor of Philosophy

Program of Study. Doctoral candidates must complete two years in residence at Brandeis, and a minimum of forty-eight course credits. Incoming students normally will be expected to take American Civilization 200a and two subject seminars during their first year of residence. The Committee may, at its discretion, grant a student transfer credit of up to one year toward the Ph.D. residence requirement for work done elsewhere. Application for such credit shall be considered only after a student has completed one semester's residence in a full-time program.

Language requirement. A high level of reading proficiency in one foreign language is required of all Ph.D. candidates.

Qualifying Examination. Each doctoral candidate must be prepared for examination in the following fields: American history (with specialization in one period); an area of modern European history; a related discipline in the social sciences or the humanities. Programs of study and concentration will be formulated for each student, subject to the approval of the Executive Committee.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon satisfactory completion of the following: course and residence requirements, demonstration of a high level of proficiency in one foreign language, and a general qualifying examination.

Dissertation and Defense. The candidate will be required to prepare a prospectus for his dissertation to be submitted for approval to the Committee. When the dissertation is accepted by the committee, a final oral examination will be scheduled at which the candidate must successfully defend his dissertation before the Committee and other members of the faculty who may participate. After a candidate has successfully defended his dissertation, he will give a public lecture.

Courses of Instruction

HISTORY 151a. The New American Republic

A study of five problems in American history, 1788-1815; the development of nationalism and sectionalism; the growth of political democracy; foreign affairs; economic expansion; and the transition from the Enlightenment to Romanticism.

Mr. Fischer

HISTORY 152b. Jacksonian Democracy

An examination of the interpretations of democratic society and politics in the Jacksonian era, from Tocqueville to the present. *Mr. Meyers*

HISTORY 153b. Civil War and Reconstruction

An intensive examination of the origins, conduct and consequence of the American Civil War, from 1848 to 1877. Economic and cultural sectionalism, social reform, political parties, and the place of the Negro in American Society.

Mr. Fischer

HISTORY 154b. Modern America*

Significant historical developments in the United States since 1914; business and economic, political, constitutional, diplomatic, social and intellectual.

HISTORY 155a. Civil Liberties in America

Examination of the historical development of individual liberties with emphasis on the role of government and the relationship between civil liberties and political and social movements.

Mr. Auerbach

HISTORY 156a. History of American Constitutional Law and Theory

The history of the Constitution and its interpretation by the Supreme Court against the background of political and economic change from the foundation of the Republic to the Civil War. Origins and development of American constitutional thought and institutions, with stress on problems of judicial review and the role of the judiciary in defining the powers and limitations of government.

Mr. Levy

HISTORY 156b. History of American Constitutional Law and Theory

The development of American constitutional law and theory since the Civil War with the emphasis on the adaptation of the Constitution to the changing needs of American society.

Mr. Levy

HISTORY 157. American Industrial Growth***HISTORY 160b. American Education**

Within the limits of American history, education is broadly conceived as the transmission of culture from Europe to the new world and from an agrarian colonial society to urban, industrial America. Emphasis is placed upon the family as an educational institution.

Mr. Fischer

HISTORY 162a. The American Political Tradition: I

An examination of eighteenth century American thought, emphasizing the development of conceptions of a distinctive republican community. Discussion of selected texts.

Mr. Meyers

HISTORY 162b. The American Political Tradition: II

An examination of American thought in the first half of the nineteenth century, emphasizing the response to new social and political problems. Discussion of selected texts.

Mr. Meyers

HISTORY 163a. American Intellectual History

The history of ideas in America from the seventeenth century to 1865. The course traces the evolution of major traditions through the writings of significant figures and in relationship to significant historical events.

Mr. Ginger

*Not to be given in 1966-67.

HISTORY 164a. History of American Political Institutions to 1865

An examination of American political institutions that stresses their relationship to the development of the culture at large. *Mr. Keller*

HISTORY 164b. History of American Political Institutions since 1865

A continuation of History 164a. *Mr. Keller*

AMERICAN CIVILIZATION 200a. Pro-Seminar: An Introduction to the History of American Civilization

Mr. Auerbach and Staff

AMERICAN CIVILIZATION 252a. Seminar on The Early Republic

Messrs. Meyers and Fischer

AMERICAN CIVILIZATION 254b. Seminar on American Political and Economic Institutions

Mr. Keller

AMERICAN CIVILIZATION 256a. Seminar on American Constitutional and Legal History to 1865

Mr. Levy

AMERICAN CIVILIZATION 256b. Seminar on American Constitutional and Legal History since 1865

Messrs. Roche and Levy

AMERICAN CIVILIZATION 263a. Seminar on American Social and Intellectual History to 1860

Mr. Ginger

AMERICAN CIVILIZATION 300. Readings in the History of American Civilization

Staff

Students may also draw from course listings in Anthropology, Economics (see Undergraduate Catalog), English and American Literature, Fine Arts (see Undergraduate Catalog), History (see Undergraduate Catalog), Near Eastern and Judaic Studies, Philosophy, Politics and Sociology.

AMERICAN CIVILIZATION 400. Dissertation Research

Mr. Keller and Staff

History of Ideas

Objectives

The program in the History of Ideas, leading to the degrees of Master of Arts and Doctor of Philosophy in History of Ideas, aims to prepare historians of thought in two areas: (1) the *History of Philosophy*, in relation to ideas in cognate fields of thought (religion, science, literature); and (2) the *History of Political and Social Thought*, in relation to political and social developments.

The endeavor throughout is to examine the interrelations of ideas in various disciplines, the interconnections between theoretical and practical activities, and the reciprocal influence of ideas and historical events.

A student trained in the program is expected to have a good general grasp of the history of philosophy *and* of the history of political and social thought; a special competence in dealing systematically as well as histor-

ically with major texts and problems in *either* the history of philosophy *or* the history of political and social thought; and a familiarity with the general history of the period in which he is concentrating.

Admission

In addition to the general requirements for admission to the Graduate School specified in an earlier section of this catalog, applicants who wish to specialize in the History of Philosophy should present an undergraduate major in philosophy or classics; applicants who plan to specialize in the History of Political and Social Thought should present an undergraduate major in political science, sociology, or history.

Faculty

Executive Committee: Professor STEPHEN TOULMIN, *Chairman*; Professors HENRY DAVID AIKEN, LEWIS A. COSER, OSCAR JANOWSKY; Associate Professors PETER DIAMANDOPOULOS, EUGENE C. BLACK.

Staff:

- Professor HENRY DAVID AIKEN: Ethics. American philosophy. Social philosophy.
- Professor ALEXANDER ALTMANN: History of Jewish philosophy and mysticism. Medieval philosophy.
- Professor DAVID BERKOWITZ: Historiography.
- Professor NORMAN CANTOR: Medieval history.
- Professor LEWIS A. COSER: Political sociology. Sociological theory.
- *Professor NAHUM N. GLATZER: Jewish history. Hebrew historiography. Eschatology.
- Professor CYRUS H. GORDON: Cuneiform. Egypto-Semitic, and Mediterranean studies.
- Visiting Professor PAUL KECSKEMETI: Social theory. Political sociology.
- Visiting Professor FREDERIC C. LANE: European economic history.
- Professor WALTER LAQUEUR: Social history of the 19th and 20th centuries.
- Professor RAMSAY MACMULLEN: Ancient history.
- Professor ROY C. MACRIDIS: Comparative politics.
- *Professor FREDERIC T. SOMMERS: Philosophy of language. Metaphysics. History of philosophy.
- Visiting Professor SAMUEL J. TODES: History of philosophy. Contemporary philosophy. Epistemology.
- Professor STEPHEN TOULMIN: Philosophy of science. History of science.
- Professor JOHN VAN HEIJENOORT: Logic. History of logic.

*On Leave, Spring Term, 1966-67.

Professor HAROLD WEISBERG: Philosophy of the social sciences. Social philosophy. Philosophy of religion.

Professor KURT H. WOLFF: Sociological theory. Sociology of knowledge.

Associate Professor EUGENE C. BLACK: Modern British and European history.

Associate Professor PETER DIAMANDOPOULOS: History of ancient philosophy. History of science.

Associate Professor BENJAMIN HALPERN: Modern Jewish history. Near Eastern political sociology.

Associate Professor PAUL C. HAMMOND: Mediterranean archaeology.

Associate Professor HEINZ M. LUBASZ: German intellectual history.

Associate Professor EUGENE J. MEEHAN: Political theory.

Associate Professor MAURICE R. STEIN: Communities. Sociology of literature. Social psychiatry.

Assistant Professor KENNETH BARKIN: Modern European history.

Assistant Professor AVIGDOR LEVY: Islamic studies. Modern Near East.

Visiting Lecturer ALVIN D. ZALINGER: Personality and social structure. Sociology of new nations. Political sociology.

Degree Requirements

All programs of study will be worked out in consultation with the student's adviser.

Master of Arts

Program of Study. The program for the Master of Arts consists of eight half-courses which are to be distributed among the various groups indicated below as follows:

1. Introduction to the History of Ideas (Group I) two half-courses.
2. History of Philosophy *or* History of Political and Social Thought (Group II) three half-courses.
3. Systematic Analysis (Group III) two half-courses:
 - a. For students concentrating in the History of Philosophy, two half-courses in Philosophy.
 - b. For students concentrating in the History of Political and Social Thought, two half-courses in Sociology or Politics.
4. One half-course in History (Group IV): one half-course in the history of the period in which the student is concentrating. This requirement must be met with a reading course when no formal course has been offered.

Language Requirement. A proficient reading knowledge of either French or German is required. The examination must be taken no later than the second term of the first year in residence. Students who fail the examination may apply for re-examination at the end of the third term in residence. Failure to pass the language examination at this time will result in severance from the program.

Qualifying Examinations. To qualify for the Master's degree, the candidate must:

1. By May 1 of his first year in residence, submit to the chairman a substantial paper on a topic upon which he has concentrated during the year;
2. Pass *one* of the following three qualifying examinations:
 - a. A three-hour written examination in general and intellectual history of the period in which he is concentrating (ancient, medieval, early modern or later modern).
 - b. A three-hour written examination in a systematic area within the fields of philosophy, political theory, sociology or one of the natural sciences.
 - c. A three-hour written examination in *either* the History of Philosophy *or* the History of Political and Social Thought *or* the History of Scientific Thought.

Students whose course work, research paper and qualifying examination are considered satisfactory will be recommended for the award of the Master's degree. Only those students whose work is outstanding will be permitted to continue toward the Ph.D. degree.

A candidate who fails the qualifying examination may take it again in September of the second year in residence.

Doctor of Philosophy

To be eligible to continue study toward the Ph.D. degree, the student must complete course work for the Master's degree with distinction (B+ or higher), he must pass the three qualifying examinations listed above with distinction, and, in the judgment of the History of Ideas Executive Committee, he must have demonstrated a capacity for independent specialized work in the area of his choice.

Program of Study. The student must complete at least eight half-courses beyond the program of study for the Master's degree. They must be chosen from the following areas:

1. Four half-courses in the History of Philosophy *or* in the History of Political and Social Thought (Group II).

2. One half-course in Systematic Analysis (Philosophy, Politics or Sociology) (Group III).
3. One half-course in History (Group IV).
4. Two half-courses in electives (Group V).

Language Requirements. Proficiency in reading both French and German is required of all doctoral candidates. Examinations in both languages will be given at the beginning of each term. The examination in the student's second language must be taken not later than the beginning of the fifth term in residence, however, students are strongly urged to take it at an earlier date. Students who fail to pass the examination at a date earlier than the fifth term may apply for re-examination at the beginning of the fifth term. Failure to pass the second language examination within the prescribed time limits will render the student ineligible for further study in the program.

Students who intend to do research in a field requiring a language other than French or German may, with the approval of the Chairman of the Executive Committee, substitute this language for either French or German.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when (1) he has passed the Master's qualifying examinations with distinction, (2) he has satisfactorily completed one year's residence beyond the M.A. program, (3) he has completed a second language examination, and (4) the subject of his dissertation has been approved by the Executive Committee.

Dissertation and Final Oral Examination. The dissertation will be accepted in partial fulfillment of the requirements for the Ph.D. degree in consultation with the student's adviser and after a majority approval by a committee of readers appointed by the Chairman of the Executive Committee. One member of this committee shall be from either the Philosophy or Sociology Department.

An oral defense of the dissertation must be given before an examining committee including members from the History of Ideas Program, the Departments of Philosophy, Politics, Sociology, and History.

Courses of Instruction

Group I Introduction to the History of Ideas

HISTORY OF IDEAS 200a. Historical Transformation of Ideas: The Character of Intellectual Revolutions

The internal development of intellectual systems; the dynamics of intellectual growth, as reflecting the aims and methods of systematic inquiry. *Mr. Toulmin*

HISTORY OF IDEAS 200b. The Historical Interpretation of Ideas: The Idea of Nature in Ancient Greece

An intensive study of selected texts from the Pre-Socratics, Plato, Aristotle, and the early Stoics dealing with the concept of nature. *Mr. Diamandopoulos*

HISTORY OF IDEAS 201a. The Role of Ideas in General History: Intellectual History of the French Revolution*

HISTORY OF IDEAS 201b. Philosophy and Ideology: Conceptions of Morals, Society and the State in the Nineteenth Century*

Special topics to be arranged in consultation with the instructor.

Group II History of Philosophical and Scientific Thought and History of Social and Political Thought

HISTORY OF IDEAS 210a. Pre-Socratic Philosophy

An intensive study of the fragments of the Pre-Socratics. A study of the transition from myth to philosophy. *Mr. Diamandopoulos*

HISTORY OF IDEAS 211a. Plato

An introduction to Plato's thought through an intensive reading of several major dialogues. Among the topics discussed will be the Socratic method, Socratic and Platonic ethics, Plato's conception of the soul, knowledge and existence.

HISTORY OF IDEAS 212b. Aristotle*

Lectures on Aristotle's views on Knowledge, Being, the Cosmos, the Soul, and human life. Extensive reading from *Organon*, *Metaphysics*, *Physics*, *De Anima*, *Ethics* and *Politics* will be required. *Mr. Diamandopoulos*

HISTORY OF IDEAS 220a. Continental Rationalism: The Philosophy of Descartes*

An intensive study of selected texts from Descartes, Spinoza and Leibnitz.

HISTORY OF IDEAS 222b. British Empiricism*

Intensive study of selected texts from Locke, Berkeley and Hume.

HISTORY OF IDEAS 223b. Kant*

Intensive study of the basic concepts of Kant's *Critique of Pure Reason* and their subsequent development in German idealism.

HISTORY OF IDEAS 224b. Contemporary Philosophy

A review of recent philosophical thought.

Mr. Todes

HISTORY OF IDEAS 225a. Seminar in Ancient Philosophy*

HISTORY OF IDEAS 225b. Seminar in Modern Philosophy

Mr. Diamandopoulos

HISTORY OF IDEAS 227a. The Idea of Historical Development

Transformations in ideas about the antiquity, and the patterns of change of society and of nature, with special reference to the period 1700-1875. *Mr. Toulmin*

*Not to be given in 1966-67.

HISTORY OF IDEAS 229a. American Philosophy*

An historical survey and analysis of the pragmatic tradition in American philosophy. Selected texts of Peirce, James, Dewey and C. I. Lewis will be discussed.

HISTORY OF IDEAS 235b. National Socialism

The ideological roots of National Socialism. Its place in German history. The history of the Nazi party. National Socialism and the varieties of fascism. Its social and economic function. A seminar.

Mr. Laqueur

HISTORY OF IDEAS 236b. Anti-Semitism in the 19th and 20th Century

This seminar will deal with anti-Semitism in France, Germany, Austria, Russia, Great Britain and the United States, between approximately 1880 and the outbreak of the Second World War. It will provide an introduction to the comparative study of anti-Semitism and the various attempts to explain it with reference to political, socio-economic and psychological factors.

Mr. Laqueur

HISTORY OF IDEAS 237a. Political Philosophy

Philosophy of political inquiry; modes of political knowledge; major political philosophers and relevance to their modes of analysis; political ideas and value systems.

Mr. Meehan

HISTORY OF IDEAS 239aR. Comparative Political Analysis

Classification and typology of political systems; political organizations, institutions and processes.

Mr. Macridis

HISTORY OF IDEAS 240a. Ancient Political Thought

A detailed examination of selected topics and authors in political thought ranging from Plato to Machiavelli.

Mr. Macridis

HISTORY OF IDEAS 242. Classical Sociological Theory

Study of major sociologists, such as Comte, Spencer, Marx, Durkheim, Pareto, Weber, Simmel, Ward, Ross, Sumner, Park, Mannheim, in their historical setting, with special attention to their substantive concerns and methodologies.

1st sem., Mr. Stein

2nd sem., Mr. Coser

HISTORY OF IDEAS 247b. The Social Context of Natural Science*

The interaction between intellectual systems and the social environment; the importance of rational factors on the dynamics of intellectual growth.

HISTORY OF IDEAS 260a. Sociology of Knowledge

History and historical interpretation of the sociology of knowledge, with particular emphasis on German and recent American literature.

Mr. Kecskemeti

HISTORY OF IDEAS 261a. Comparative Political Sociology

Mr. Zalinger

Group III Systematic Courses in Philosophy, Politics, Sociology**HISTORY OF IDEAS 250b. Intermediate Logic**

Informal and axiomatic development of quantification theory. Notions of consequence, theorem, proof. Semantics of quantification, semantical completeness of the theory. Naive set theory, the nature of formal systems.

Mr. van Heijenoort

*Not to be given in 1966-67.

HISTORY OF IDEAS 251a. Ethical Theory in the Twentieth Century

Readings in the works of twentieth century authors. Attention will be given to questions concerning the meaning of ethical terms, the nature and function of moral judgments, moral reasoning and principles and concepts of volition and action as they pertain to problems of ethics. *Mr. Aiken*

HISTORY OF IDEAS 252a. Theory of Knowledge

Such questions as the nature of truth, the reliability of sense perception, and the problem of *a priori* knowledge will be discussed. *Mr. Wartofsky*

HISTORY OF IDEAS 252b. Metaphysics*

An examination of ontological categories, their structure and formation.

HISTORY OF IDEAS 253b. Philosophy and the Idea of Nature

The roots of philosophical problems in natural science, with particular reference to the seventeenth and eighteenth centuries. *Mr. Toulmin*

HISTORY OF IDEAS 256a. Social and Political Philosophy

The problem of justifying social and political beliefs, including a critical examination of leading attempts to justify such beliefs by appeal to history, natural law, human nature and theology. *Mr. Weisberg*

HISTORY OF IDEAS 256b. Seminar in the Philosophy of History and the Social Sciences***HISTORY OF IDEAS 257. Methodology and Political Science**

The theory and method of political analysis, with special attention to the logic of explanation, empirical theories, models and the role of values.

Messrs. Meehan and Toulmin

Group IV Institutional History**HISTORY 106a. The Changing Greek City-State**

Reading of sources, especially Thucydides, with modern commentary, covering the period 431 to 323 B.C. (Pro-seminar.) *Mr. MacMullen*

HISTORY 107b. Studies in the Decline of the Roman Empire

Intensive study of government, society, and culture of the fourth century.

Mr. MacMullen

HISTORY 123a. Europe in the Early Middle Ages

Mr. Cantor

HISTORY 123b. Europe in the Later Middle Ages

Mr. Cantor

HISTORY 126b. Constitutional History of Modern England

Mr. Cantor

HISTORY 128. The Renaissance and Reformation in Europe

Mr. Berkowitz

HISTORY 129b. Beginnings of Capitalism

Mr. Lane

HISTORY 130a. Religion and Revolution in 17th Century England

Mr. Berkowitz

*Not to be given in 1966-67.

HISTORY 134a. History of Europe 1789-1848

This course surveys European history from the French Revolution to the mid-nineteenth century. It stresses the changes which followed the revolution and the different national forms.

Mr. Barkin

HISTORY 134b. History of Europe: 1848-1914

This course surveys European history from 1848 to the first World War and emphasizes the quest for political, economic and social stability in the major European states.

Mr. Barkin

HISTORY 135b. The Growth of Modern Industrial Society

A pro-seminar. The industrial revolution in Europe with emphasis upon Great Britain, Germany and France. Problems in technological and entrepreneurial history, the social implications of economic change and the intellectual and institutional impact of these developments.

Mr. Black

HISTORY 143a. History of Russia to 1825

Pro-Slavic developments, the establishment of the Kievan state, invasion and internal decline; appanage Russia and the rise of regional centers, Muscovite Russia and the growth of the autocracy and Imperial Russia and the impact of Western Europe.

Mr. Hegarty

HISTORY 143b. History of Russia: 1825 to the Present

Russian *Rechtsstaat* at its height. Modernization of Russia; Russian industrialization under the Romanovs; roots of the Russian revolution; early Bolshevik state; NEP and the rise of Stalin; collectivization and industrialization; Soviet foreign policy and international Communism; the Khrushchev era and prospects for the future.

Mr. Hegarty

HISTORY 144a. Modern Britain, 1760-1867

Mr. Black

HISTORY 144b. Modern Britain: 1867 to the Present

Social, economic, cultural and political history of Britain from the Second Reform Act to the evolution of the welfare state.

Mr. Black

HISTORY 145a. History of Germany: 1848-1945

The economic, political and diplomatic history of Germany inclusive of Austria-Hungary from the revolution of 1848 to the collapse of National Socialism in 1945.

Mr. Barkin

HISTORY 145b. The Weimar Republic

A seminar dealing with economic, political and intellectual developments between World War I and the assumption of office by Hitler.

Mr. Barkin

HISTORY 150a. The Age of Democratic Revolution, 1760-1830

Mr. Black

Group V General Intellectual History**HISTORY OF IDEAS 218a and b. Seminar on Medieval Thought and Culture**

Prerequisites: History 123a and b or equivalent. Reading knowledge of Latin, French and German. Admission by permission of instructor only.

Mr. Cantor

HISTORY OF IDEAS 269a and b. History of the East Mediterranean from Alexander to Mohammed

First term: From 330 B.C. to 100 A.D.

Second term: From 100 A.D. to 621 A.D.

Mr. Hammond

HISTORY OF IDEAS 270. The Civilization of the Ancient Near East

A comprehensive study of the cultures of the Ancient Near Eastern World with special attention to their history, political organization, material culture, literature, and religions.

Messrs. Gordon, Levine, Sarna and Staff

HISTORY OF IDEAS 278a. The Categories of the Spiritual Life in Jewish Neoplatonism

A study of Bahya, Ibn Gabirol and Yehuda ha-Levi.

Mr. Altman

HISTORY OF IDEAS 279a. Modern Jewish Intellectual History to 1870

Jewish ideologies and movements from the Enlightenment to the rise of political anti-Semitism.

Mr. Halpern

HISTORY OF IDEAS 279b. Modern Jewish Intellectual History since 1870

Jewish ideologies and movements from the rise of political anti-Semitism to the present.

Mr. Halpern

HISTORY OF IDEAS 280b. History of Historical Literature and Historical Method

Lectures, readings and reports dealing with the development of the practice of historical investigation, the problem of historical method, and the contemporary modes of historical expression.

Mr. Berkowitz

HISTORY OF IDEAS 282a. Moses Mendelssohn and Beginnings of Modern Jewry*

A seminar studying the transition of Jews from the Ghetto into the European world. Analysis of important literary documents of the period.

HISTORY OF IDEAS 283a. The Second Jewish Commonwealth

Source studies in the history and culture of Palestine from 538 B.C. to 70 A.D.

Mr. Glatzer

HISTORY OF IDEAS 285a. Political Modernization in the Near East

The development of political institutions in the successor states of the Ottoman Empire. Critique of models of political modernization in the current literature of the region.

Mr. Halpern

HISTORY OF IDEAS 286b. Existentialism: Past and Present*

HISTORY OF IDEAS 287b. Introduction to Jewish Mysticism

An analysis of the sources and motives contributing to the rise of medieval Jewish mysticism. The stages of the development from the close of the Talmudic period to the appearance of the *Zohar* and down to Isaac Luria.

Mr. Altman

HISTORY OF IDEAS 300. Readings in the History of Ideas

Staff

HISTORY OF IDEAS 400. Dissertation Research

Independent research for the Ph.D. degree.

400. *Mr. Altman*

404. *Mr. Lubasz*

401. *Mr. Berkowitz*

405. *Mr. Toulmin*

402. *Mr. Coser*

406. *Mr. Weisberg*

403. *Mr. Diamandopoulos*

*Not to be given in 1966-67.

Mathematics

Objectives

The graduate program in mathematics is designed primarily to lead to the Doctor of Philosophy degree. The formal course work is devoted to giving the student a broad foundation for work in modern pure mathematics. An essential part of the program consists of seminars on a variety of topics of current interest in which mathematicians from greater Boston often participate. In addition, the Brandeis-Harvard-M.I.T. Mathematics Colloquium gives the student an opportunity to hear the current work of eminent mathematicians from all over the world.

Admission

The general requirements for admission to graduate work in mathematics are the same as those for the Graduate School as a whole. The department has available a variety of fellowships and scholarships for well qualified students. To be considered for such financial support the student should submit application by February 1, 1967.

Faculty

Professor RICHARD S. PALAIS, *Chairman*: Differential Topology.

*Professor MAURICE AUSLANDER: Algebra and Homological Algebra.

Professor EDGAR H. BROWN, JR.: Algebraic Topology.

Professor DAVID A. BUCHSBAUM: Algebra and Homological Algebra.

*Professor JOSEPH J. KOHN: Analysis

Professor TERUHISA MATSUSAKA: Algebraic Geometry

Professor HUGO ROSSI: Analysis.

*Associate Professor HAROLD LEVINE: Differential Topology.

Associate Professor JEROME LEVINE: Differential Topology.

Associate Professor ALAN MAYER: Algebraic Geometry.

*Associate Professor ROBERT T. SEELEY: Analysis.

Visiting Assistant Professor PAUL MONSKY: Algebraic Geometry.

Assistant Professor THOMAS O. SHERMAN: Topological Groups and Group Representations.

Assistant Professor ALPHONSE VASQUEZ: Algebraic Topology.

DR. MICHAEL FREEMAN: Analysis.

DR. WILLIAM E. FULTON: Analysis.

DR. RICARDO NIRENBERG: Analysis.

DR. MICHAEL SPIVAK: Algebraic Topology.

DR. REGINALD WOOD: Algebraic Topology.

*On Leave, 1966-67.

Degree Requirements

Master of Arts

1. One year's residence as a full-time student.
2. Successful completion of an approved schedule of courses.
3. Satisfactory performance on the General Examination which is normally taken by all degree students at the beginning of their second year.
4. Proficiency in reading French or German.

Doctor of Philosophy

1. Residence as a full-time student for two years.
2. Successful completion of an approved schedule of courses.
3. Superior performance on the General Examination.
4. Doctoral dissertation approved by the department.
5. Final examination consisting of the defense of dissertation.
6. Proficiency in reading both French and German.

Program of Study. Each student must complete a schedule of courses approved by his adviser. The normal first year of study consists of Mathematics 101, 111, and 121. Students are expected to attend seminars of their choice in addition to Mathematics 199 which is required. The first year's work should be followed by three courses in the 200 series. After the second year, advanced courses, seminars and independent reading are offered to prepare the student for work on a dissertation.

General Examination. After successful completion of his first year courses, the student must pass a written examination and participate in a seminar in his second year.

The written examination will be given in October and March. It will cover the material of the syllabi; these lists of topics and references in algebra, analysis and topology will be distributed to the students at the beginning of their first year.

In the summer after his first year, each student will prepare a topic in mathematics, which he will present in a seminar during his second year. The topics chosen will be more advanced than those in the syllabi and must be approved by the faculty.

Admission to Candidacy. To be admitted to candidacy for the Ph.D. degree in Mathematics, the student must demonstrate a superior performance on the General Examination and must be recommended for candidacy by the department.

Dissertation and Defense. The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.

Courses of Instruction

The 100, 200, and 300 courses meet three hours per week for the entire year and carry six credits. The seminar courses meet one hour per week and are *non-credit* courses.

MATHEMATICS 101a and b. Algebra I

Groups, rings, fields, Galois theory, representations and modules.

Mr. Buchsbaum

MATHEMATICS 111a and b. Analysis I

Fundamental existence theorems for several real variables, manifolds and Riemann surfaces.

Mr. Rossi

MATHEMATICS 121a and b. Point Set Topology

Set theory, topological spaces, function spaces and covering spaces.

Mr. J. Levine

MATHEMATICS 140. Analysis

Topics to be covered will be chosen from among the following, depending upon the preparation and interests of the students: construction of the real numbers, metric spaces, measure theory and integration, functions of several variables, fundamental existence theorems, uniform convergence, Fourier theory, differential forms and Stokes' type theorems.

Mr. Spivak

MATHEMATICS 199. Problem Seminar

A seminar required of all first year graduate students.

Staff

MATHEMATICS 201a. Algebra II

Function fields and commutative rings.

Mr. Matsusaka

MATHEMATICS 202a and b. Algebraic Geometry I

Introduction to algebraic geometry.

Mr. Mayer

MATHEMATICS 203a and b. Algebraic Number Theory I

Number fields, units and ideal classes, class number formulas, primes in arithmetic progressions. Local fields, class field theory, Artin reciprocity. Applications to quadratic forms. Algebraic geometry in dimension one, Riemann-Roch theorem, elliptic curves, Mordell's theorem.

Mr. Monsky

MATHEMATICS 211. Analysis II*

Singular integral operator on L^p spaces, for Euclidean space and for manifolds, with applications to the study of elliptic partial differential equations on manifolds with or without boundary.

MATHEMATICS 212a. Functional Analysis

Locally convex spaces, Krein-Millman, Hahn-Banach theorems, Hilbert space and Banach space, various facts about operators.

Mr. Sherman

MATHEMATICS 212b. Harmonic Analysis

Abelian Banach algebras, W^* -algebras, C^* -algebras, CCR-algebras.

Mr. Sherman

*Not to be given in 1966-67.

MATHEMATICS 213a and b. Harmonic Integrals*

The purpose of this course is to study representations of various cohomology theories by solutions of systems of partial differential equations. The course presupposes only the first year courses. It will contain an introduction to elliptic systems, calculus of variations, boundary value problems and related topics.

MATHEMATICS 221a and b. Algebraic Topology I

Sheaves, homology theory, and homotopy theory.

Mr. Brown

MATHEMATICS 291. Algebra Seminar

Messrs. Buchsbaum and Matsusaka

MATHEMATICS 292. Analysis Seminar

Messrs. Rossi and Sherman

MATHEMATICS 293. Topology Seminar

Messrs. Brown and Vasquez

MATHEMATICS 302a and b. Algebraic Geometry II***MATHEMATICS 303a and b. Algebraic Number Theory II*****MATHEMATICS 311a or b. Fourier Analysis**

To be announced

MATHEMATICS 313. Group Representation and Analysis of Groups

Mr. Palais

MATHEMATICS 321a or b. Algebraic Topology II

To be announced

MATHEMATICS 322a and b. Differential Topology***MATHEMATICS 324a. Lie Groups*****MATHEMATICS 332. Differential Topology and Non-linear Analysis*****MATHEMATICS 401-411. Research**

Independent research for the Ph.D. degree.

401. *Mr. Auslander*

408. *Mr. Monsky*

402. *Mr. Brown*

409. *Mr. Palais*

403. *Mr. Buchsbaum*

410. *Mr. Rossi*

404. *Mr. Kohn*

411. *Mr. Seeley*

405. *Mr. H. Levine*

412. *Mr. Sherman*

406. *Mr. J. Levine*

413. *Mr. Vasquez*

407. *Mr. Matsusaka*

Mediterranean Studies

Objectives

The graduate program in Mediterranean Studies aims at inducting the student into the investigation of major problems involving the meeting of different peoples in and around the Mediterranean Sea, where Western civilization was first created and then developed. The instruction will train the student to master the primary sources as he learns the broad synthesis. Master of Arts as well as Doctor of Philosophy candidates are expected to show a grasp of the problem as a whole, as well as the ability to work in a

*Not to be given in 1966-67.

variety of different sources. Doctor of Philosophy candidates will be required to demonstrate also a capacity for original research.

The scope of the department embraces Mediterranean developments from Antiquity and down to, but not including Modern Times. Students will be trained in history and archaeology as well as in the languages and literatures.

Courses will normally involve two or more interrelated sources. While it is desirable for the student to know as many of the sources as possible in advance, no student is expected to come ideally equipped with complete linguistic preparation. If a course requires the use of a source that the student has not already studied, he will ordinarily be permitted to enroll, provided that he is concurrently taking a basic language course to make up the deficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area.

Students planning to enter this department should take as much Hebrew, Greek and Latin as possible during their undergraduate course of study.

Faculty

Professor CYRUS H. GORDON, *Chairman*: Cuneiform, Egypto-Semitic, and Mediterranean studies.

Associate Professor PHILIP C. HAMMOND: Mediterranean Archaeology.

Associate Professor DWIGHT W. YOUNG: Egypto-Semitic and Cuneiform studies.

Assistant Professor HARRY A. HOFFNER, JR.: Hittite, Helleno-Semitic studies.

DR. ANDRAS HAMORI: Semitic linguistics.

Degree Requirements

Master of Arts

Program of Study. Each candidate for the Master's degree is required to complete satisfactorily not less than twenty-four semester hours of course work in the department, plus any courses outside the department that the major professor may prescribe. The candidate must also show a command of either Latin or Greek, and of Hebrew or Arabic, plus at least one other Oriental language (such as Akkadian, Ugaritic, or Egyptian).

Language Requirement. A reading knowledge of one modern foreign language (ordinarily French or German) is required.

Qualifying Examinations. The student must demonstrate, in written and oral examinations, proficiency in the sources of two major areas of the program and an ability to synthesize them. A broad grasp of the Mediterranean origins of Western Civilization will be required of all candidates, beyond the specific topics covered in courses.

Doctor of Philosophy

The requirements are the same as for the Master of Arts degree, plus twenty-four additional semester hours of course work in the department, a reading knowledge of two modern foreign languages (ordinarily French and German), and a doctoral dissertation.

Admission to Candidacy. A student shall be eligible for admission to candidacy upon completing his language requirements and satisfactorily passing his written and oral examinations. Proficiency in those examinations must be demonstrated in three major areas of the program; e.g., Assyrian, Greek, and Hebrew (texts and history), or Egyptian, Ugaritic, and Arabic.

Dissertation and Defense. The dissertation should be a significant and original contribution to scholarship and should demonstrate a capacity for independent research based on primary sources. After submission of the dissertation, the candidate will be expected to defend it in a final oral examination.

Courses of Instruction

MEDITERRANEAN STUDIES 100. The Civilization of the Ancient Near East

A comprehensive study of the cultures of the Ancient Near Eastern World with special attention to their history, political organization, material culture, literature, and religions.
Messrs. Gordon, Levine, Sarna and Staff

MEDITERRANEAN STUDIES 101a. History of the Mediterranean in the Early Bronze Age*

To be given in 1967-68.

MEDITERRANEAN STUDIES 102b. History of the Mediterranean in the Second Millennium B.C.*

To be given in 1967-68.

MEDITERRANEAN STUDIES 103a. History of the Mediterranean in the First Millennium B.C.*

To be given in 1967-68.

MEDITERRANEAN STUDIES 103b. History of the Mediterranean in the First Millennium A.D.*

To be given in 1967-68.

*Not to be given in 1966-67.

MEDITERRANEAN STUDIES 104a and b. History of the East Mediterranean from Alexander to Mohammed

First term: From 330 B.C. to 100 A.D.

Second term: From 100 A.D. to 621 A.D.

Mr. Hammond

MEDITERRANEAN STUDIES 107. History and Sources of the Crusades

A study of the political and social history of the Crusader Castles in the Near East, and of texts bearing on the Crusades.

Messrs. Gordon and Hamori

MEDITERRANEAN STUDIES 110. Archaeology of the East Mediterranean*

To be given in 1968-69.

MEDITERRANEAN STUDIES 111a. Archaeology of the West Mediterranean*

To be given in 1968-69.

MEDITERRANEAN STUDIES 112. Archaeology of Canaan

The excavations in Syria-Palestine and the interpretation of the architecture and monuments found in them. This course will be conducted in a way to prepare students for field work.

Mr. Hammond

MEDITERRANEAN STUDIES 113a. Archaeology of Egypt

The explorations and excavations. The art and monuments of Pharaonic Egypt.

Mr. Hammond

MEDITERRANEAN STUDIES 114b. Archaeology of Mesopotamia

Sumerian, Babylonian and Assyrian art and archaeology. An account of the discoveries and their historic interpretation.

Mr. Hammond

MEDITERRANEAN STUDIES 115a. Archaeology of Anatolia*

To be given in 1967-68.

MEDITERRANEAN STUDIES 122a. Prophetic Books of the Bible

The style and development of Hebrew Prophecy against a background of ancient Mediterranean rhetoric.

Mr. Hamori

MEDITERRANEAN STUDIES 127. Biblical Books of the Heroic Age*

To be given in 1967-68.

MEDITERRANEAN STUDIES 130. Elementary Akkadian

A study of Ungnad's Grammar and readings of selected texts in cuneiform.

Mr. Hoffner

MEDITERRANEAN STUDIES 138a. Elementary Ugaritic

Grammar and poetic texts. C. H. Gordon's *Ugaritic Textbook*, 1965, will be used.

Prerequisite: A knowledge of biblical Hebrew.

Mr. Young

MEDITERRANEAN STUDIES 140. Elementary Middle Egyptian

Gardiner's *Egyptian Grammar* supplemented with reading simple narratives such as *The Shipwrecked Sailor*.

Mr. Young

*Not to be given in 1966-67.

MEDITERRANEAN STUDIES 150a. Homeric Epic

Selections from the *Odyssey* will be read with constant reference to Egyptian, Semitic and Hittite literatures.

Prerequisite: A knowledge of Attic or New Testament Greek. *Mr. Hoffner*

MEDITERRANEAN STUDIES 151. Hesiod and the Epic Cycle*

To be given in 1967-68.

MEDITERRANEAN STUDIES 152. Greek Historiography*

To be given in 1967-68.

MEDITERRANEAN STUDIES 153b. Mycenaean Greek Tablets in Linear B

Prerequisite: A knowledge of Attic or New Testament Greek. *Mr. Hoffner*

MEDITERRANEAN STUDIES 154. The Septuagint*

To be given in 1967-68.

MEDITERRANEAN STUDIES 160a. The Aeneid with Reference to its Homeric, Phoenician and Punic Background

Prerequisite: A knowledge of Latin. *Mr. Gordon*

MEDITERRANEAN STUDIES 161b. The Poenulus of Plautus

The Punic dialogue as well as the Latin text will be analyzed.

Prerequisite: A knowledge of Latin. *Mr. Gordon*

MEDITERRANEAN STUDIES 162b. The Vulgate*

To be given in 1967-68.

MEDITERRANEAN STUDIES 216. Archaeological Pro-Seminar*

To be given in 1967-68.

MEDITERRANEAN STUDIES 221b. Historical Books of the Bible*

A historical book will be examined in Hebrew, Greek and Latin with special attention to the pronunciation of Hebrew names in Greek and Latin transliteration. All of the Minoan texts, and all of the Phoenician and Punic texts in Greek and Latin letters, will be read and correlated.

Prerequisite: A basic knowledge of Hebrew, Latin and Greek.

MEDITERRANEAN STUDIES 223b. Old Testament Hagiographs*

To be given in 1967-68.

MEDITERRANEAN STUDIES 224a. Semitic Inscriptions of the Mediterranean*

To be given in 1967-68.

MEDITERRANEAN STUDIES 231a. Intermediate Akkadian

Rapid reading in Assyrian Annals.

Prerequisite: Mediterranean Studies 130. *Mr. Hamori*

MEDITERRANEAN STUDIES 231b. Intermediate Akkadian

Rapid reading in the Nuzu tablets.

Prerequisite: Mediterranean Studies 130. *Mr. Young*

*Not to be given in 1966-67.

MEDITERRANEAN STUDIES 232. Akkadian Poetry*

To be given in 1967-68.

MEDITERRANEAN STUDIES 233. Akkadian Texts from the West*

To be given in 1967-68.

MEDITERRANEAN STUDIES 234. Akkadian Letters and Diplomatic Texts*

To be given in 1968-69.

MEDITERRANEAN STUDIES 235. Sumerian*

To be given in 1967-68.

MEDITERRANEAN STUDIES 236. Elementary Hittite*

To be given in 1967-68.

MEDITERRANEAN STUDIES 237a and b. Advanced Hittite

Legal texts will be read in the first term; ritual and magic texts in the second term.
Mr. Hoffner

MEDITERRANEAN STUDIES 238. Ugaritic*

To be given in 1967-68.

MEDITERRANEAN STUDIES 241a. Middle Egyptian Romances

Rapid reading of texts such as *The Romance of Sinuhe* and *The Eloquent Peasant*.

Prerequisite: Mediterranean Studies 140.

Mr. Young

MEDITERRANEAN STUDIES 242b. Late Egyptian Stories

Rapid reading in texts such as *The Two Brothers*, *The Misadventures of Wenamon*, *The Taking of Joppa* and *Horus and Seth*.

Prerequisite: Mediterranean Studies 140.

Mr. Young

MEDITERRANEAN STUDIES 243. The Pyramid Texts*

To be given in 1967-68.

Prerequisite: Mediterranean Studies 241a and 242b.

MEDITERRANEAN STUDIES 244a. Coptic

Saidic and the other Coptic dialects will be studied comparatively, with readings in the *Apophthegmata Patrum* and various Gnostic texts.

Prerequisite: Students must have completed, or be taking concurrently, Mediterranean Studies 140.

Mr. Young

MEDITERRANEAN STUDIES 244b. Demotic

Orthography, grammar and reading of *The Khamwise Story*.

Prerequisites: Mediterranean Studies 140 and 244a.

Mr. Young

MEDITERRANEAN STUDIES 263. Pro-Seminar on Roman Historiography*

To be given in 1968-69.

MEDITERRANEAN STUDIES 270. Linguistic Pro-Seminar

In 1966-67, Ethiopic grammar and reading of classical texts will constitute the point of departure.
Mr. Hamori

*Not to be given in 1966-67.

MEDITERRANEAN STUDIES 325b. West Semitic Seminar*

To be given in 1967-68.

MEDITERRANEAN STUDIES 339. Cuneiform Seminar*

To be given in 1968-69.

MEDITERRANEAN STUDIES 345. Egyptian Seminar*

To be given in 1967-68.

MEDITERRANEAN STUDIES 371b. Egypto-Semitic Seminar*

To be given in 1968-69.

MEDITERRANEAN STUDIES 400-403. Dissertation Research

Independent research for the Ph.D. degree.

400. *Mr. Gordon*

401. *Mr. Young*

402. *Mr. Hoffner*

403. *Mr. Hammond*

Music

Objectives

The graduate program in Music, leading to the degrees of Master of Fine Arts and Doctor of Philosophy, is designed to provide a command of the craft of composition and an understanding of the nature, structural basis, and historical development of music.

Three general fields of study are offered in music:

1. *Music Composition*. This program leads to the degree of Master of Fine Arts.

2. *Music Composition and Theory*. This program leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

3. *History of Music*. This program leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

Students must specialize in one of these areas but are expected to acquire a background in all three.

Admission

Only a limited number of students will be accepted. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Applicants for study in Musical Composition or Music Theory are required to submit, in addition to a transcript of their undergraduate records, evidence of qualification in the form of examples of original work

*Not to be given in 1966-67.

in musical composition and advanced work in musical theory. Applicants for admission in the History of Music should submit examples of their prose writing on music as evidence of their ability to handle the language and specialized vocabulary. Undergraduate theses or term papers will be satisfactory. This work should be submitted together with the formal Application for Admission.

All applicants are expected to have some proficiency at the piano or on an orchestral instrument. Information about this should be furnished when making formal application.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the department between March 1 and March 15. Readmission will be refused in cases where students have not demonstrated a capacity for acceptable graduate work.

Faculty

Professor HAROLD SHAPERO, *Chairman*; Professor ARTHUR BERGER, SEYMOUR SHIFRIN; Associate Professors PAUL H. BRAINARD, ROBERT K. KOFF (on leave, 2nd term), CALDWELL TITCOMB, LEO TREITLER; Assistant Professor MARTIN BOYKAN; Lecturers LOUIS S. BAGGER, MADELINE FOLEY, ALVIN LUCIER; Consultants EUGENE LEHNER, GEORGE ZILZER.

Degree Requirements

Master of Fine Arts

Language Requirements.

Group A: French, German, Italian.

Group B: Spanish, Latin, Hebrew, Greek (and other languages at the discretion of the Music faculty).

A reading knowledge of a language from Group A is normally required of all applicants for admission to a graduate program in music.

Candidates for the Master's degree specializing in Musical Composition must possess a reading knowledge of two of the above languages, of which at least one must be from Group A. (The combination of Italian and Spanish will not be approved).

Candidates for the Master's degree specializing in Music Theory or in History of Music must possess a reading knowledge of two languages in Group A.

Foreign language course credits will not in themselves constitute fulfillment of the language requirements for advanced degrees. All candidates must pass language examinations set by the Music faculty and offered periodically during the academic year. Students are urged to take these exami-

nations at the earliest feasible date. In case of failure, an examination may be taken more than once.

The language examinations are designed to test the students' ability to make ready and accurate use of critical and literary works. Normally each examination will contain three passages for written translation into idiomatic English: (1) classical or modern prose; (2) classical or modern poetry, often poetry that has been set to music; and (3) critical prose dealing with music. Dictionaries may be used in these examinations.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates for advanced degrees.

Residence Requirements. Six full courses or the equivalent in half-courses at the graduate level, completed with distinction, and a thesis are required of all candidates.

The department normally allows credit for no more than one full course taken at another institution.

In general, the program is completed in two academic years. Students should take no more than four full courses in any one year. It is suggested, however, that students pursue no more than three full courses during the year in which they take general examinations and submit a thesis. Students holding teaching assistantships may reduce their load to two courses.

Examinations. Early in March of their first year of study, graduate students will be expected to pass an examination in the standard literature of music from the early eighteenth century to the present. Upon admission, each candidate will receive a list of works to guide his listening.

When their program of study is completed, candidates for the degree of Master of Fine Arts must pass with distinction written general examinations in theory and history, one of which will be their major field, the other their minor field.

Thesis. Candidates for the degree of Master of Fine Arts in Music are required to submit a thesis. For candidates in Musical composition this will consist of a musical composition, its scope to be approved by the Music faculty. For candidates in the History of Music or in Music Theory and Composition it will be an analytical or historical study on a topic acceptable to the Music faculty. Part of this requirement in Music Theory and Composition may be met by an original musical composition.

Doctor of Philosophy

Residence Requirements. A minimum of eight full courses or the equivalent in half-courses at the graduate level, completed with distinction, are required of all candidates.

In general, the program will be completed in three academic years.

Applicants who have done graduate work elsewhere may apply for transfer of credit for such work; a maximum of one year of residence may be granted.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates.

Language Requirements. Candidates for the Doctor's degree in Music must possess a reading knowledge of all three languages in Group A. (In exceptional cases, the Music faculty may accept a language in Group B in lieu of Italian).

Examinations. Candidates will be expected to pass with unusual distinction the written general examination for the M.F.A. After meeting their language and residence requirements they must pass the special oral qualifying examination. Upon completion of their dissertation they will be expected to defend it in an oral examination.

Admission to Candidacy. Students will be admitted to candidacy for the Ph.D. degree upon successful completion of the written and oral qualifying examinations, fulfillment of the language requirements, and the approval of a dissertation topic.

Dissertation. Candidates for the degree of Doctor of Philosophy in the History of Music or in Music Theory and Composition must submit an acceptable written dissertation on a subject approved by the Music faculty. In certain cases, and with the prior approval of the department, qualified candidates for the degree in Theory and Composition may meet a part of the dissertation requirement with an original composition.

Written dissertations should demonstrate the competence of the candidate as an independent investigator, his critical ability, and his effectiveness of expression. Upon completion of the dissertation the candidate will be expected to defend it in an oral examination.

Courses of Instruction

Except in the rarest circumstances, graduate credit is not allowed for courses numbered below Music 165.

MUSIC 165a. Elementary Orchestration

The instruments of the orchestra; their construction, ranges and playing techniques, with a consideration of their use by major composers; the methods of writing effectively for present-day instruments, individually and in combination; the mechanics of reading and writing a score.

Written exercises, analysis of scores, study of recorded performances and live demonstrations.

Mr. Lucier

MUSIC 166b. Seminar in Advanced Orchestration*

*Not to be given in 1966-67.

MUSIC 167. Composition in Traditional Forms

The melodic phrase; types of accompaniment; studies in harmonic rhythm; trio forms, rondo forms, sonata forms, variation forms, and free forms. Analysis and exercises.

Mr. Shapero

MUSIC 171b. History and Practice of Music Criticism*

An examination of music criticism from the Baroque to the present day, with special attention to important nineteenth and twentieth century critics.

Prerequisite: A knowledge of music history and theory.

MUSIC COLLOQUIUM

Discussions of special topics led by the faculty and occasional guests. Some of the sessions will include performances of new works. Required of all graduate students. *Non-credit.*

Staff and Visiting Lecturers

MUSIC 180b. Ethnomusicology***MUSIC 200. Materials of Research***

This course will acquaint the student with the main tools and materials of research, so as to enable him readily to pursue musicological, critical, and analytical projects in music both old and new.

MUSIC 201. Collegium Musicum*

Studies in music history through coordinated research and performance. Source and notational problems of selected historical examples will be treated in detail. Course members will be able to participate, together with members of the staff, in studio performances. Whenever possible, the course material will be integrated with that of one or more concurrent advanced courses in music history.

MUSIC 203. Advanced Musical Analysis

Special analytic problems of structural interpretation with emphasis on total form and intrinsic relation rather than upon the conventions (sonata, rondo, etc.). Intensive and detailed analysis of scores in terms of such considerations as the premises of the tonal system, Schenker's concept of musical unity, serial organization. Questions of methodology and terminology raised by the "new theory."

Mr. Berger

MUSIC 222. Seminar in Medieval and Renaissance Music

Studies in the history of music from early Christian times through the end of the sixteenth century.

Mr. Treitler

MUSIC 223. Seminar in Baroque Music

Studies in historical developments in music of the seventeenth and eighteenth centuries. Typical full-year projects will include: the cantatas of J. S. Bach; seventeenth century keyboard music; history of cantata and oratorio in the seventeenth century; sonata, suite, concerto; Baroque opera.

Mr. Brainard

MUSIC 224. Seminar in Pre-Classical and Classical Music*

Study of historical problems in the music of the middle and late eighteenth century. Sample topics include: transitional sonata forms through early Haydn and Mozart; Beethoven's sketch books; stylistic interactions among the Viennese Classicists; opera from Pergolesi to Mozart.

*Not to be given in 1966-67.

MUSIC 225. Seminar in Romantic Music

Selected topics in music from Beethoven, Weber, and Schubert to Strauss, Mahler, and Sibelius. Some consideration will be given to Impressionism and to the relations between music and the other arts. *Mr. Titcomb*

MUSIC 228. Seminar in Twentieth Century Techniques*

Exercises in composition employing musical materials and organizational methods developed since about 1900, accompanied by analysis of works of composers from Debussy to the present.

MUSIC 232. Problems in Early Notation*

Trouvère notation; modal and mensural notations of the thirteenth century; French and Italian notations of the *ars nova*; white notation of the fifteenth century; introduction to Byzantine and Gregorian paleography; readings from the Medieval theorists.

MUSIC 233b. Problems in Fifteenth and Sixteenth Century Music***MUSIC 238. Studies in Contemporary Music**

Seminars devoted to the intensive study of important twentieth century compositions. *Mr. Shifrin*

MUSIC 263. Canon and Fugue

Principles governing the construction of invertible counterpoint, various kinds of canon, strict and free fugues. Analysis of classic and modern fugues and detailed study of Johann Sebastian Bach's *Art of the Fugue*. Written exercises. *Mr. Boykan*

MUSIC 292. Seminar in Composition

Group meetings and individual conferences. Opportunities for the performance of student works will be provided. *Messrs. Berger and Shapero*

MUSIC 295b. Problems in Electronic Music***MUSIC 299. Individual Research and Advanced Work**

Individual research and advanced work in musical literature, musical history and in special problems of musical analysis, esthetics, theory and criticism. *Staff*

MUSIC 400-405. Dissertation Research

Required of all doctoral candidates.

400. *Mr. Berger*

403. *Mr. Shifrin*

401. *Mr. Brainard*

404. *Mr. Titcomb*

402. *Mr. Shapero*

405. *Mr. Treidler*

Electronic Music Studio

The facilities of the studio for electronic music, established in 1961, are available to qualified student composers and provide equipment for magnet-tape manipulation appropriate to the composition of electronic music and *musique-concrète*.

*Not to be given in 1966-67.

Near Eastern and Judaic Studies

Objectives

The graduate program in Near Eastern and Judaic Studies, leading to the Master of Arts and Doctor of Philosophy degrees, is designed to train scholars and teachers in the various cultures of the Near East and of the classical and modern Judaic civilization, and to do further research in these areas. This work is done mainly through study of the relevant languages and literatures and interpretation of historical sources.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this department.

Faculty

ASSOCIATE PROFESSOR BARUCH A. LEVINE, *Acting Chairman*: Semitic languages. Classical Hebrew literature. Dead Sea Scrolls.

Professor ALEXANDER ALTMANN: History of Jewish philosophy and mysticism. Medieval philosophy. Classical Bible commentaries.

*Professor NAHUM NORBERT GLATZER: Jewish history. Literature of the Second Commonwealth. Hebrew historiography. Eschatology.

Associate Professor NAFTALI C. BRANDWEIN: Modern Hebrew literature.

Associate Professor BENJAMIN HALPERN: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Associate Professor NAHUM M. SARNA: Biblical studies.

Assistant Professor AVIGDOR LEVY: Arabic language. Modern Near East. Turkish.

MR. LEON A. JICK: Contemporary Jewish History.

Program of Study

Among the main fields in the area of Near Eastern and Judaic Studies in which courses are being given in the Graduate School are:

Semitic Languages and Literatures (Akkadian, Arabic, Aramaic, Egyptian, Hebrew, Syriac).

History of Ancient Near East.

Islamic Studies.

Biblical Studies.

Jewish History.

Medieval Jewish Philosophy and Mysticism.

The Modern Near East.

Contemporary Jewish Studies.

Fields of study not listed here may be approved.

*On Leave, Spring Term, 1966-67.

Degree Requirements

Master of Arts

Residence Requirements. The student is required to complete four full courses in the department. Programs of study are kept flexible; the department will consider the needs and interests of each student and advise him in outlining a program of study—this program may be modified later by the department. Students may be required to take courses given by other departments. A student who can, on admission, give evidence of satisfactory competence in one Semitic language or in one particular field of Near Eastern and Judaic Studies, will be able to complete the program for his degree in one year. Additional resident study may be required of less advanced students.

Language Requirements. Every candidate for the Master of Arts degree must show proficiency in one Semitic language, and in French or German. In special cases, another modern foreign language may be substituted for one of the two listed here. The foreign language requirements are to be satisfied by examination not later than eight weeks before a candidate is to receive his degree.

Examination. An oral examination is given at the conclusion of the student's residence. The examination is organized around two major subjects chosen from the fields of study undertaken by the student and is designed to test the student's knowledge in those subjects as well as his ability to relate his information to the large area to which those subjects belong. A student who fails to pass the examination, or any part of it, may apply for re-examination, which will take place not earlier than one semester after the date of the first examination.

Thesis. In certain cases, the student is advised to write a thesis which must be submitted no later than May 1 of the year in which the degree is to be conferred. In such cases, the student registers in the Dissertation Colloquium (NEJS 400) which then counts as one of the required four courses.

Doctor of Philosophy

Residence Requirement. The residence normally required of a Ph.D. student who is the holder of an M.A. degree is one year (four courses); a longer residence will be required for part-time students and students holding teaching assistantships. The main emphasis, however, is placed on the students' individual research.

Language Requirements. A candidate for the Doctor of Philosophy degree in this area must show proficiency in two Semitic languages and in two modern foreign languages, as required by his special field of research.

The candidate must satisfy his language requirements no later than at the completion of his required residence in the Graduate School.

Examinations. A written or an oral comprehensive examination in three areas of study (the scope being determined at a conference with the examining board) is given at the conclusion of the student's residence. A student who fails to pass the examination, or any part of it, may apply for a re-examination, which will take place not earlier than one semester after the date of the first examination.

Admission to Candidacy. A student registered for studies leading to the Ph.D. degree becomes a candidate for that degree when he has fulfilled his residence requirements, when the subject and synopsis of his dissertation have been accepted by the department, when he has passed the comprehensive examinations, and fulfilled the language requirements.

Dissertation and Defense. The student will discuss his plans for a dissertation with the chairman of the department and the dissertation supervisor. The conferences on the planning and the program of the dissertation take place in the Dissertation Colloquium (NEJS 400), a course in which the candidate is to register. Normally, the candidate will continue working on his dissertation after the completion of his residence, i.e., as a nonresident student. The dissertation must demonstrate the candidate's thorough knowledge of the field and his competence in independent research, and must constitute an original contribution to knowledge. Two copies of the dissertation, one of which must be the original typescript, are to be deposited in the office of the department chairman not later than April 1 of the year in which the candidate plans to take the degree. A defense of the dissertation will be held.

Courses of Instruction

NEJS 100. The Civilization of the Ancient Near East

A comprehensive study of the cultures of the Ancient Near Eastern World with special attention to their history, political organization, material culture, literature, and religions.

Messrs. Gordon, Levine, Sarna and Staff

NEJS 101. Basic Arabic

An introduction to literary Arabic (classical and modern). Grammar. Reading of graded texts. Drills in pronunciation.

Open to students who have not previously had instruction in Arabic.

Mr. Levy

NEJS 102. Intermediate Arabic

Advanced grammatical study coupled with related readings from representative classical and modern texts.

Prerequisite: NEJS 101.

Mr. Levy

NEJS 103a and b. History of the East Mediterranean from Alexander to Mohammed

See Mediterranean Studies 104a and b.

Mr. Hammond

NEJS 104a. Aramaic Dialectology*

Texts in Biblical, Elephantine, Galilean, and Jewish Babylonian Aramaic will be studied, introducing the student to the Aramaic culture of Antiquity. No previous knowledge of Aramaic is required.

Prerequisite: Competence in Biblical Hebrew.

NEJS 105a. Syriac*

Introductory course. Grammar and simple texts.

NEJS 106a. Elementary Ugaritic

See Mediterranean Studies 138a.

Mr. Young

NEJS 107. Elementary Akkadian

See Mediterranean Studies 130.

Mr. Hoffner

NEJS 108a. Intermediate Akkadian

See Mediterranean Studies 231a.

Mr. Hamori

NEJS 108b. Intermediate Akkadian

See Mediterranean Studies 231b.

Mr. Young

NEJS 109. Archaeology of Canaan

See Mediterranean Studies 112.

Mr. Hammond

NEJS 110b. Archaeology of Mesopotamia

See Mediterranean Studies 114b.

Mr. Hammond

NEJS 111b. History of the Biblical Text*

An account of the growth of the Biblical text and the ancient versions of the Bible.

NEJS 112a. Biblical Hebrew: Languages*

A systematic introduction to Biblical grammar (including syntax). A selection of pertinent texts will be read.

NEJS 112b. Biblical Hebrew: Readings of Texts*

A continuation of NEJS 112a.

NEJS 113a. The Priestly Writings of the Pentateuch*

The literary and historical traditions of the priestly writings in Exodus, Leviticus and Numbers will be examined with attention to relevant archaeological finds and extra-Biblical sources from the ancient Near East.

NEJS 114a. Studies in the Biblical Cult

A comparative study of cultic material in the historical and prophetic books with special emphasis on features of the royally sponsored cults and prophetic attitudes toward ritual.

Mr. Levine

NEJS 115a. Biblical Epic

Epic writings, especially those contained in Israelite prophecy, will be studied against the background of other Near Eastern literature. Special attention to some critical considerations.

Mr. Levine

*Not to be given in 1966-67.

NEJS 115b. Deuteronomy

Emphasis on language, composition, and the influences of the Deuteronomic outlook on other Biblical works. The historical views and the religious institutions reflected in Deuteronomy will be analyzed. *Mr. Levine*

NEJS 116a. The Minor Prophets*

A reading of Nahum, Habakkuk, and Zephaniah and an examination of the concepts underlying their prophecies.

NEJS 116b. The Prophecies of Ezekiel*

A reading of the Book of Ezekiel. The nature of Israelite prophetic experience. Readings in other Biblical books relevant to Ezekiel.

NEJS 117a. The Book of Psalms

Selected readings. An examination of Hebrew and Near Eastern psalmody. A study of the leading religious concepts in the light of modern exegesis. *Mr. Sarna*

NEJS 117b. The Book of Job and the Problem of Evil*

A reading of the Book of Job (in English translation) and a discussion of the role of the book in the literature and thought of the Western world; the problem of evil in Judaism and Christianity.

NEJS 118a. The Five Megillot*

The texts will be studied in the original, applying philological and exegetical methods of critical analysis.

NEJS 118b. The Book of Chronicles

An intensive comparative study in Biblical historiography. *Mr. Sarna*

NEJS 120b. Readings in Talmudic Literature*

Selections from the Tractate Gittin studied in the original with emphasis on the history of Rabbinic legal institutions.

NEJS 121b. Jewish Texts from the Early Christian Centuries

Tannaitic sources from the Mishnah and Midrashim will be studied in connection with the second century discoveries from the Judean desert. Emphasis on the status of the Hebrew language and the use of Aramaic in Palestine.

Texts: The Mishnah, Tosefta, Halakhic, Midrashic and the Judean texts.

Mr. Levine

NEJS 122a. Classical Bible Commentaries

Selected texts, primarily from Rashi, ibn Ezra, Nahmanides, and David Kimhi's commentaries. Introduction to the history of the medieval interpretation of the Bible. A knowledge of Hebrew is required. *Mr. Altmann*

NEJS 123a. The Categories of the Spiritual Life in Jewish Neoplatonism

A study of Bahya, Ibn Gabirol and Yehuda ha-Levi.

Mr. Altmann

NEJS 124b. Introduction to Jewish Mysticism

An analysis of the sources and motives contributing to the rise of medieval Jewish mysticism. The stages of the development from the close of the Talmudic period to the appearance of the *Zohar* and down to Isaac Luria. *Mr. Altmann*

*Not to be given in 1966-67.

NEJS 125b. Selected Texts from Genesis Rabba

A study of the earliest documents of Midrashic speculation on cosmological and kindred problems. Tracing of Hellenistic, especially Gnostic sources. The origins of Jewish mysticism. *Mr. Altman*

NEJS 135a. Maimonides' Guide to the Perplexed*

A study of selected chapters as focal points in the development of medieval Jewish philosophy. A knowledge of Hebrew is required.

NEJS 135b. Medieval Jewish Philosophy

A survey of the various phases of Jewish philosophy from the 10th century until the Renaissance. *Mr. Altman*

NEJS 137a. Major Trends in Modern Hebrew Literature

A lecture course, in English, covering a history of ideas, as reflected in the writings from the Enlightenment to the establishment of the State of Israel.

Mr. Brandwein

NEJS 138a. Hebrew Literature of the Twentieth Century

The development of modern Hebrew poetry and prose, from Hayim Nahman Bialik to Yehuda Amichai, and from Mendele to Hayim Hazaz. The texts will be analyzed in the light of contemporary European literature. *Mr. Brandwein*

NEJS 138b. Hebrew Literature of the Twentieth Century

A continuation of NEJS 138a.

Mr. Brandwein

NEJS 139a. Ahad Haam and His Time*

Reading and discussion of essays of Ahad Haam, Berdichevsky, Bialik, Brenner, A. D. Gordon, and Klatzkin. A seminar.

Reading knowledge of Hebrew is required.

NEJS 139b. Modern Hebrew Literature

An intensive study of selected texts of contemporary Hebrew prose and poetry, with emphasis on parallel motifs and patterns in European literature.

Mr. Brandwein

NEJS 140a. History of the Jews in Antiquity and the Middle Ages*

The organization and function of the Jewish community; intellectual developments and changes in religious doctrine; mysticism; Messianic movements; the Jewish community in European economic life.

NEJS 140b. History of the Jews in Modern Times*

The emancipation of the Jews in Western Europe; the Haskalah movement. The great migrations to the West. Renaissance of Hebrew culture; anti-Semitism, Zionism. Problems of contemporary Jewish life in the United States.

NEJS 141. History and Sources of the Crusades

See Mediterranean Studies 107.

Messrs. Gordon and Hamori

NEJS 144a. Political Modernization in the Near East

The development of political institutions in the successor states of the Ottoman Empire. Critique of models of political modernization in the current literature of the region. *Mr. Halpern*

*Not to be given in 1966-67.

NEJS 146b. Nationalism in the Near East*

A comparative historical analysis of the theory and practice of nationalism in the Ottoman Empire and its successor states from 1800 to 1920. The Balkan, North African, Turkish, Egyptian and Arab movements compared with European models.

NEJS 147b. The Ottoman Empire

History of the Turks under the Ottomans, 1481-1914, from the end of the 13th century to World War I.

Mr. Levy

NEJS 149b. History of Palestine and Contemporary Israel

Topics in the diplomatic history of the region. Bibliography, problems methods of research.

Mr. Halpern

NEJS 151b. Introduction to Islamic Philosophy*

The rise of Greek philosophy among the Arabs. Farabi, Avicenna, Ghazzali, Averroes. Selections in translation will be read and discussed.

NEJS 160a. American Jewish Institutional History*

Social history of American Jewry from colonial times to the Second World War. Emphasis on the development of communal institutions.

NEJS 162. Problems in American Jewish History

See Contemporary Jewish Studies 162.

Mr. Jick

NEJS 163b. The Contemporary American Jewish Community

See Contemporary Jewish Studies 170b.

Mr. Rosenberg

NEJS 164. Jewish Education in America: American Historical and Institutional Study

See Contemporary Jewish Studies 180.

Mr. Janowsky

NEJS 166a. Modern Jewish Intellectual History to 1870.

Jewish ideologies and movements from the Enlightenment to the rise of political anti-Semitism.

Mr. Halpern

NEJS 166b. Modern Jewish Intellectual History since 1870

Jewish ideologies and movements from the rise of political anti-Semitism to the present.

Mr. Halpern

NEJS 168. The Destruction of European Jewry

See Contemporary Jewish Studies 201.

Mr. Goldhagen

NEJS 171 Modern Yiddish Literature (in Translation)

A survey of the chief figures of Yiddish literature during the past century, with emphasis on the historical and cultural content. The major writers from Mendelev, Peretz, and Sholem Aleichem to Bashevis Singer and their response to a world in transition.

Mr. Landis

NEJS 172b. Seminar in Works of Leivick (in Yiddish)

Mr. Landis

NEJS 225b. North-West Semitic Inscriptions

A linguistic, historical and religious study of Hebrew, Moabite and Phoenician inscriptions in their original scripts.

Mr. Sarna

*Not to be given in 1966-67.

NEJS 256a. The Second Jewish Commonwealth

Source studies in the history and culture of Palestine from 538 B.C. to 70 A.D.

Mr. Glatzer

NEJS 258b. Studies in Eschatological Theories*

Messianic and Apocalyptic concepts in the Old Testament prophets, Apocrypha and the Dead Sea writings in post-Biblical Judaism and early Christianity; Messianic movements in the Middle Ages.

NEJS 260b. Topics in American Jewish History*

A research seminar.

NEJS 280a. Moses Mendelssohn and Beginnings of Modern Jewry*

A seminar studying the transition of Jews from the Ghetto into the European world. Analysis of important literary documents of the period.

NEJS 320-329 Reading Courses

Special tutorials for advanced graduate students.

320a. Readings in Jewish History

Mr. Glatzer

322. Readings in Medieval Jewish Philosophy

Mr. Altmann

325. Readings in Biblical Texts

Messrs. Levine and Sarna

326. Readings in Islamic Civilization

To be announced

327. Readings in Syriac Literature

Mr. Levine

328. Readings in Turkish Literature

Mr. Levy

329. Readings in Modern Near East and Modern Jewish History

Mr. Halpern

NEJS 400-405. Dissertation Colloquium

Independent research for the Ph.D. degree.

400. *Mr. Altmann*

403. *Mr. Levine*

401. *Mr. Glatzer*

404. *Mr. Brandwein*

402. *Mr. Halpern*

405. *Mr. Sarna*

Philosophy

Objectives

The graduate program in philosophy is designed to prepare students for careers in philosophy as scholars and teachers. It places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. The number of students admitted to the program is small and the most important part of a student's work is done in small seminars and tutorials under close faculty supervision.

Admission

In addition to the general requirements for admission to the Graduate School as specified in an earlier section of this catalog, applicants for admission to the graduate program in philosophy should have had at least one year of history of philosophy and at least one course in logic.

*Not to be given in 1966-67.

Faculty

Associate Professor PETER DIAMANDOPOULOS, *Chairman*: History of ancient philosophy. History of science.

*Professor HENRY DAVID AIKEN: Ethics. American philosophy. Social philosophy.

Professor NELSON GOODMAN: Cognitive studies. Epistemology.

**Professor FREDERIC SOMMERS: Philosophy of language. Metaphysics. History of philosophy.

Visiting Professor SAMUEL J. TODES: Epistemology. History of philosophy. Contemporary philosophy.

Professor STEPHEN TOULMIN: Philosophy of science. History of science.

Professor JOHN VAN HEIJENOORT: Logic. History of logic. Foundations of mathematics.

Professor HAROLD WEISBERG: Philosophy of the social sciences. Social philosophy. Philosophy of religion.

Visiting Associate Professor MARX WARTOFSKY: History of philosophy. Metaphysics. Philosophy of language.

Assistant Professor ANN FERGUSON: Epistemology. Philosophy of mind.

Degree Requirements

All programs will be worked out in consultation with the student's adviser.

Master of Arts

Generally only candidates for the Ph.D. degree are accepted, although in some cases an M.A. degree will be awarded upon satisfactory completion of the following requirements:

1. One year's residence as a full time student.
2. Successful completion of a prescribed schedule of courses.
3. Passing qualifying examinations in logic, history of philosophy, and a special text examination.
4. Demonstration of proficiency in either French *or* German.

Doctor of Philosophy

The degree requirements for the Ph.D. degree are as follows:

1. Residence as a full-time student for two years.
2. Successful completion of a prescribed schedule of courses.
3. Passing all qualifying examinations with distinction.
4. Demonstration of proficiency in either French *or* German.
5. Admission to candidacy.
6. Submission of a doctoral dissertation approved by the department.
7. Successful defense of the dissertation.

*On Leave, Spring Term, 1966-67.

**On Leave, 1966-67.

Program of Study. Each student will be assigned a tutor who will advise him on his course of study and guide him in his preparation for the qualifying examinations. First year students are required to take the pro-seminar in philosophy (Philosophy 200) and six additional semester courses, four of which must be within the Philosophy Department. Second year students are required to take two semester courses from the 200 series and six additional semester courses. The student is also encouraged to take some work in a field other than philosophy that is related to his area of concentration. Such work may be taken in the first or second year and will count toward the fulfillment of the residence and course requirements for the Ph.D. It must have the prior approval of the student's adviser and the department chairman. A second year student may not take more than two semester reading courses in the 300 series; these must also be approved by his adviser and the department chairman.

Qualifying Examinations. Qualifying examinations are given each fall and spring in logic, epistemology and metaphysics, value theory, history of philosophy and on a philosophical text. The title of the text will be announced four months before the examination is given. The text examination and the examination in logic and epistemology must be taken in the spring of the first year of study. All examinations must be passed with distinction within thirty months of initial enrollment in order to qualify for the Ph.D. degree. No examination may be taken more than twice.

Language Requirement. A proficient reading knowledge of either French or German is required. A student must take an examination in either language by the spring term of his first year in residence and must meet the language requirement no later than the beginning of his fifth term in residence. Language examinations will be given early in the fall and spring terms. The department reserves the right to establish additional language requirements when necessary for a student's doctoral research.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed his residence requirement, has passed with distinction all of the qualifying examinations, has fulfilled the language requirement and when the subject of his dissertation has been approved by the department.

Dissertation Topic Oral Examination. To meet the final requirement for admission to candidacy, a student must have departmental approval of a thesis prospectus and must pass with distinction an oral examination in the general area of his proposed topic.

Dissertation and Defense. When a student has been admitted to candidacy, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervi-

sion of this committee and when it has been read and accepted by the committee a final oral examination will be scheduled wherein the candidate will defend his dissertation.

Courses of Instruction

PHILOSOPHY 104a. Pre-Socratic Philosophy*

An intensive study of the fragments of the Pre-Socratics. A study of the transition from myth to philosophy.

PHILOSOPHY 105a. Plato

An introduction to Plato's thought through an intensive reading of several major dialogues. Among the topics discussed will be the Socratic method, Socratic and Platonic ethics, Plato's conception of the soul, knowledge, and existence.

Mr. Diamandopoulos

PHILOSOPHY 105b. Aristotle*

Lectures on Aristotle's views on Knowledge, Being, the Cosmos, the Soul, and human life. Extensive reading from *Organon*, *Metaphysics*, *Physics*, *De Anima*, *Ethics* and *Politics* will be required.

PHILOSOPHY 115a. Intermediate Logic

Propositional calculus. Quantification theory. Satisfiability and validity. Completeness. Lowenheim-Skolem theorem. Many-sorted logic. Theory of types.

Mr. van Heijenoort

PHILOSOPHY 117a. Ethical Theory in the Twentieth Century

Readings in the works of twentieth century authors. Attention will be given to questions concerning the meaning of ethical terms, the nature and function of moral judgments, moral reasoning and principles, and concepts of volition and action as they pertain to problems of ethics.

Mr. Aiken

PHILOSOPHY 118b. Philosophy and the Idea of Nature

The roots of philosophical problems in natural science, with particular reference to the seventeenth and eighteenth centuries.

Mr. Toulmin

PHILOSOPHY 119a. Theory of Knowledge

Such questions as the nature of truth, the reliability of sense perception, and the problem of a priori knowledge will be discussed.

Mr. Wartofsky

PHILOSOPHY 121b. Foundations of Mathematics

Formal systems. Godel's theorems and consequences. Consistency proofs. Introduction to the theory of recursive functions. Hilbert's program and intuitionism.

Mr. van Heijenoort

PHILOSOPHY 130a. Philosophy of Logic

An examination of the fundamental notions of logic. Signs and symbols. Sentences, statements, and propositions. Negation, implication, deductibility, logical consequence. Theory of descriptions. The relation of formalized logic to ordinary language.

Mr. van Heijenoort

*Not to be given in 1966-67.

PHILOSOPHY 131a. Theory of Symbols

Types and functions of symbols and symbolic schemes in perception and cognition, and in the arts and sciences. Languages and notations; discursive, digital, and analog systems. Representation, expression, description. Models and metaphors.

Mr. Goodman

PHILOSOPHY 133b. Contemporary Philosophy

A review of recent philosophical thought.

Mr. Todes

PHILOSOPHY 143a. Continental Rationalism

Intensive study of selected texts from Descartes, Spinoza and Leibnitz.

Mr. Diamandopoulos

PHILOSOPHY 143b. British Empiricism*

Intensive study of selected texts from Locke, Berkeley and Hume.

PHILOSOPHY 144b. Medieval Philosophy*

A survey of the development of philosophy from the Patristic Age to High Scholasticism.

PHILOSOPHY 147a. American Pragmatism*

An historical survey and analysis of the pragmatic tradition in American philosophy. Selected texts of Peirce, James, Dewey and C. I. Lewis will be discussed.

PHILOSOPHY 151a. Social and Political Philosophy

The problem of justifying social and political beliefs, including a critical examination of leading attempts to justify such beliefs by appeal to history, natural law, human nature and theology.

Mr. Weisberg

PHILOSOPHY 156b. Philosophy of Mind

A discussion of several major problems in the philosophy of mind.

Miss Ferguson

PHILOSOPHY 158b. Metaphysics*

An examination of ontological categories, their structure and formation.

PHILOSOPHY 167b. Kant

To be announced

PHILOSOPHY 200. Pro-Seminar

Required of all first year students.

Staff

PHILOSOPHY 205a. Seminar in Modern Philosophy*

PHILOSOPHY 205b. Seminar in Ancient Philosophy

Mr. Diamandopoulos

PHILOSOPHY 215b. Seminar on the History of Logic

Mr. van Heijenoort

PHILOSOPHY 222a. Seminar in Ethics*

PHILOSOPHY 225b. Seminar in the Philosophy of History and the Social Sciences*

PHILOSOPHY 226a. The Idea of Historical Development

Transformations in ideas about the antiquity, and the patterns of change of society and of nature, with special reference to the period 1700-1875. *Mr. Toulmin*

*Not to be given in 1966-67.

PHILOSOPHY 232b.	Logical Structure of Experience	<i>Mr. Goodman</i>
PHILOSOPHY 245b.	Seminar in the Philosophy of Science*	
PHILOSOPHY 257a.	Seminar in the Theory of Knowledge*	
PHILOSOPHY 258b.	Seminar in Metaphysics	<i>Mr. Wartofsky</i>
PHILOSOPHY 300a and b.	Readings in Philosophy	<i>Staff</i>
PHILOSOPHY 400-408.	Dissertation Research	
Independent research for the Ph.D. degree.		
400.	<i>Mr. Sommers</i>	405. <i>To be announced</i>
401.	<i>Mr. Aiken</i>	406. <i>Mr. van Heijenoort</i>
402.	<i>Mr. Weisberg</i>	407. <i>To be announced</i>
403.	<i>Mr. Diamandopoulos</i>	408. <i>Mr. Goodman</i>
404.	<i>Mr. Toulmin</i>	

Philosophy Colloquium

The Philosophy Colloquium meets monthly and attendance is required. Distinguished visitors read papers and discuss their current work at these colloquia.

Physics

Objectives

The graduate program in physics is designed to equip the student with a broad understanding of all major fields of physics and to train him to carry out independent original research. This objective is to be attained by formal course work and supervised research projects. As the number of students who are accepted is limited, a close contact between students and faculty is maintained, permitting close supervision and guidance of each student.

Advanced degrees will be granted upon evidence by the student of his knowledge, understanding and proficiency in classical and modern physics, and in mathematics. The satisfactory completion of advanced courses will constitute partial fulfillment of these requirements. Research upon which theses may be based, with residence at Brandeis, can be carried out in the following areas:

Theoretical Physics: Quantum theory of fields; meson theory; quantum electrodynamics; elementary particle physics; general theory of relativity; nuclear physics; quantum statistical mechanics; thermodynamics of irreversible processes; quantum theory of the solid state; the many-body problem; kinetic theory of ionized gases; plasma physics; theoretical astrophysics.

*Not to be given in 1966-67.

Astrophysics: Stellar constitution; stellar and galactic evolution; radiative transfer; cosmology and cosmogony; stellar mechanics; continuum mechanics.

Experimental Physics: Nuclear physics; high energy experimental physics, primarily work with bubble chambers on the properties of the strange particles; atomic and molecular beams; optical pumping; solid state physics; nuclear magnetic resonance; phase transition phenomena; low temperature physics.

Admission

As a rule, only candidates for the Ph.D. degree will be accepted. The general requirements for admission to the Graduate School apply to candidates for admission to the graduate area in physics. Admission to advanced courses in physics will be granted following a conference with the student at entrance.

Faculty

Professor STEPHAN BERKO, *Chairman:* Experimental nuclear and solid state physics. Positron interactions in solids.

*Professor STANLEY DESER: Quantum theory of fields. Elementary particles. General relativity.

Professor DAVID L. FALCOFF: Classical and quantum statistical mechanics. Irreversible processes. Quantum theory of solids.

*Professor JACK S. GOLDSTEIN, *Director, Astrophysics Institute:* Astrophysics. Radiative transfer. Stellar interiors.

Professor EUGENE P. GROSS: Quantum theory of multiparticle systems. Quantum theory of solids. Kinetic theory. Plasma physics.

Professor EDGAR LIPWORTH: Atomic and molecular beams. Optical pumping. Lasers.

Professor SILVAN S. SCHWEBER: Quantum theory of fields. Elementary particle physics. Quantum theory of multiparticle systems.

Associate Professor MAX CHRETIEN: Experimental high energy physics. Elementary particles.

Associate Professor MARCUS T. GRISARU: Field theory. Mathematical physics. Elementary particles.

Associate Professor HOWARD SCHNITZER: Nuclear theory. Elementary particle theory.

Assistant Professor H. DANIEL COHEN (as of September 1967): Experimental physics at low temperatures. Liquid helium.

*On Leave, 1966-67.

Assistant Professor IRA GILBERT: Statistical mechanics of stellar systems.

Assistant Professor PETER HELLER: Solid state experimental physics. Nuclear magnetic resonance.

Assistant Professor CHRISTOPH HOHENEMSER: Experimental atomic and nuclear physics.

Assistant Professor ROBERT V. LANGE: Theoretical many body and solid state physics.

Assistant Professor MOSLEY A. MEER: High energy experimental physics.

Assistant Professor HUGH N. PENDLETON III: Elementary particles. S-matrix theory. Quantum theory of atoms, molecules and solids.

Assistant Professor MARCEL SCHNEEBERGER: High energy experimental physics.

Assistant Professor SANFORD E. WOLF: High energy experimental physics.

Degree Requirements

Program of Study. The requirements for advanced degrees in the Department of Physics are as follows:

Master of Arts

1. One year's residence as a full-time student.
2. Eighteen semester hours of advanced courses in physics.
A thesis on an approved topic may be accepted in place of a semester course.
3. Reading knowledge of French, German, or Russian.
4. Satisfactory performance in the General Examination.

Doctor of Philosophy

1. Two years' residence as a full-time student.
2. Twenty-seven semester hours of advanced courses in physics.
3. Reading knowledge of two foreign languages chosen from French, German and Russian. (Italian may be substituted for French.) A knowledge of computer programming may be substituted for a *second* language.
4. Outstanding performance in the General Examination.
5. Passing of an Advanced Examination in topics related to the student's thesis subject. This examination will normally be taken after preparatory studies in the prospective field of research.
6. Doctoral thesis and final oral examination.

Program of Study and Course Requirements. Normally, first year graduate students will elect lecture courses from the 100 series; second year

students from the 200 series. To obtain credit toward residence for a graduate course taken at Brandeis, a student must achieve a final grade of "A" or "B" in that course. A student who obtains a grade lower than "B" or an "Incomplete" in two or more courses in any term will not be allowed to continue his studies beyond the end of that academic year. (A course from which a student withdraws after midterm will be considered as "Incomplete.")

A student may obtain credit for advanced courses taken at another institution provided their level corresponds to the level of the graduate courses at Brandeis and that he obtained an honor grade in these courses.

Residence Requirements. A student may obtain up to one year's residence credit toward the Ph.D. requirements for graduate studies taken at another institution. No transfer residence credit will be allowed toward fulfillment of the Master's requirements.

Language Examinations. The language examination consists of a written translation of a scientific text into English. It is arranged informally between the student and the foreign language examiner. The computer programming examination consists of three parts:

In Part 1 a student is given a problem which will require a reasonably complete knowledge of Fortran and some non-trivial logic. The student will be expected to know how to punch the cards, assemble the program ("debug" if necessary), check correctness of calculation, etc., and present printed results to the examining committee.

In Part 2 the above procedure is repeated on a different problem; however, SPS programming must be used.

Part 3 consists of an oral examination in which the student should demonstrate a general knowledge of computers (their usefulness, logical and memory capacity speeds, etc.).

For further information concerning the computing examination, consult the Director of the Computer Center.

General Examination. The General Examination consists of an oral examination administered by a faculty committee and should be taken by all degree students by the end of their third term. One language examination must be taken before the General Examination.

The General Examination is designed to test whether a student has understood and integrated the material of his undergraduate and first year graduate studies. It consists of a series of an examination in depth, in two subjects agreed upon in advance. Its contents are not related to particular lectures at Brandeis. To prepare for the General Examination the student is advised to consult the graduate adviser as early as possible. Satisfactory

grades, or the equivalent, in Physics 100a, 101a and b, 102a and b, and 110a and b are prerequisites to the examination.

The General Examination should be taken before the *fourth term* of study at Brandeis. Qualified students are encouraged to take it earlier. Students with a Master's degree from another university *must* take it within a year after entering Brandeis.

Outstanding performance on the General Examination qualifies a student for a Master's degree and allows him to present himself for the Advanced Examinations. Satisfactory but not outstanding performance qualifies a student for the Master's degree. The student may present himself, within a year, for re-examination on those parts of the General Examination in which his performance was not outstanding. In the case of unsatisfactory performance a student may either be asked to withdraw from the University or he may be allowed, within a year, to take the General Examination again.

Advanced Examination. The Advanced Examination is designed to test the student's knowledge and abilities in his chosen field of research. After passing the General Examination, the student begins work with an adviser who guides his research program. The adviser should be a member of the Brandeis faculty but in special circumstances may be a physicist associated with another research institution. The adviser will work out a program of study to familiarize the student with current research in his field and to explore possible dissertation topics. The Graduate Committee of the Physics Faculty will then appoint a dissertation committee, to which the student must submit a written progress report at the end of each term. The student's dissertation adviser will be the chairman of the dissertation committee. The Advanced Examination will cover the student's field of research, as well as closely related topics, and will be taken on a date set by the adviser within three terms of passing the General Examination. It will be administered by the dissertation committee, which will determine its content and form (written or oral). Depending upon the recommendation of his adviser and his performance in the Advanced Examination, the committee will recommend the student for admission to candidacy for the doctorate, allow him a second attempt, or request him to withdraw from the University.

Dissertation and Final Oral Examination. The doctoral dissertation must represent a piece of original research of a standard acceptable to a faculty committee (dissertation committee) appointed for each Ph.D. candidate. The final oral examination, or defense, is an examination in which the student will be asked questions pertaining to his dissertation research.

Courses of Instruction

PHYSICS 100a. Theoretical Mechanics

Mechanics of point systems. Lagrangian and Hamiltonian methods. Small vibrations. Transformation theory. Integral invariants. Kinematics and dynamics of rigid bodies. Perturbation theory. Relativistic mechanics. *Mr. Gilbert*

PHYSICS 100b. Continuum Mechanics

The mechanics of continuous media. Hydrodynamics; non-linear phenomena; shock waves. *Mr. Golden*

PHYSICS 101a and b. Electromagnetic Theory

Electrostatics, magnetostatics, boundary value problems. Maxwell's Equations. Quasi-stationary phenomena. Radiation. *To be announced*

PHYSICS 102a and b. Quantum Mechanics

A critical review of the experiments leading to the quantum hypothesis. Representations, pictures, operator methods. Schrödinger equation and applications. Spin. Addition of angular momenta; helium spectrum. Pauli Principle. Atomic and molecular structure. Elementary scattering theory: atomic and nuclear scattering. *Mr. Grisaru*

PHYSICS 103a. Low Energy Nuclear Physics

Experimental methods. Phenomenology of nuclear properties. Two-nucleon problem. Models for nuclear structure. Radioactivity. *Mr. Wolf*

PHYSICS 103b. High Energy Nuclear Physics

High energy accelerators and particle detectors. Relativistic kinematics. Classification schemes of elementary particles. *Mr. Wolf*

PHYSICS 104a. Modern Atomic and Molecular Physics

Microwave spectroscopy, NMR, atomic beams, optical pumping, masers and lasers. *Mr. Lipworth*

PHYSICS 104b. Solid State Physics

Thermal, electric and magnetic properties of solids. Lattice vibrations. Specific heat. Band theory of solids. Fermi surface. *Mr. Lange*

PHYSICS 109a and b. Advanced Laboratory

Mr. Hohenemser

PHYSICS 110a. Mathematical Physics

Linear vector spaces: matrices, operators, Hilbert spaces. Orthogonal functions. Probability theory. *Mr. Schnitzer*

PHYSICS 110b. Mathematical Physics

Complex variables. Differential equations. Boundary value problems. Special functions. Integral equations. Numerical methods. *Mr. Schnitzer*

PHYSICS 200a. Special Theory of Relativity*

Foundations of the special theory. Lorentz transformations. Four-dimensional formulation of physics. Relativistic mechanics. Classical theory of fields.

*Not to be given in 1966-67.

PHYSICS 200b. General Theory of Relativity*

Physical background—the equivalence principle. Mathematical background—tensor analysis, affine spaces, Riemann manifolds. The Einstein field equations and their physically important special solutions. Experimental verification. The gravitational field as a dynamical system; application of field theoretical methods.

PHYSICS 201a. Thermodynamics and Kinetic Theory

Thermodynamics. Chemical reactions. Irreversible processes. Kinetic theory. Diffusion. Boltzmann equation. *Mr. Schweber*

PHYSICS 201b. Statistical Mechanics

Ensembles and phase space. Maxwell-Boltzmann distribution. Boltzmann's H-theorem. Bose-Einstein and Fermi-Dirac distributions. The quantum mechanical H-theorem. Statistical explanation of thermodynamics. Applications: theory of condensation, low temperature phenomena. *Mr. Falkoff*

PHYSICS 202a and b. Advanced Quantum Mechanics

Formal theory of scattering. Relativistic one particle equations. Elementary quantization of radiation field. Feynman positron theory and applications. *Mr. Gross*

PHYSICS 203a and b. Elementary Particle Physics

An introduction to the phenomenology of subnuclear physics. Recent theoretical approaches to the dynamics of strongly-interacting systems of elementary particles. S-matrix theory, analyticity approximations, bootstraps, current algebra. *Mr. Pendleton*

PHYSICS 204a. Solid State Physics*

Adiabatic approximation. Molecular structure. Electronic structure of solids. Specific heats. Theory of electric and thermal conductivity of solids. Electron-lattice interactions. Superconductivity. Collective interactions in solids.

PHYSICS 208a. Astrophysics*

Hertzprung-Russell diagram. Classification of stellar systems. Physics of stellar interiors. Radiative transfer problems. Abundances of the elements. Stellar models. Physics of the interstellar medium. Origin of cosmic rays. *Mr. Nishida*

PHYSICS 209. Laboratory Seminar

Analysis of some important recent experiments (such as molecular beams, cyclotron, etc.) to understand apparatus and techniques. *Experimental Staff*

PHYSICS 210a and b. Statistical Plasma Theory

Green's Function Formalism; quantum plasmas; linear response functions; collective modes; classical kinetic equations. *Mr. Kalman*

PHYSICS 302b. Quantum Theory of Fields

The theory of interacting quantized fields. Quantum electrodynamics. Mesodynamics. Field theoretical description of the weak and strong interactions. *To be announced*

PHYSICS 303b. Quantum Theory of Solids*

The application of the principles of quantum mechanics to the solid state.

PHYSICS 310a,b. Group Theory and Applications

The application of group theory to problems in quantum mechanics and elementary particle physics. *To be announced*

*Not to be given in 1966-67.

PHYSICS 321. Seminar in Special and General Relativity*

PHYSICS 323. Seminar in Quantum Theory of Fields*

PHYSICS 324a. Seminar in Advanced Statistical Mechanics*

PHYSICS 325a. Seminar in Astrophysics

Various topics in astrophysics, including theories of formation of the solar system. *To be announced*

Research Courses

PHYSICS 401. Experimental Atomic and Molecular Physics *Mr. Lipworth*

PHYSICS 402. Theoretical Atomic and Molecular Physics *Mr. Pendleton*

PHYSICS 403. Experimental Nuclear Physics *Messrs. Berko and Hohenemser*

PHYSICS 404. Theoretical Nuclear Physics *Messrs. Gross and Schnitzer*

PHYSICS 405. Experimental Elementary Particle Physics
Messrs. Chrétien, Schneeberger and Wolf

PHYSICS 406. Theoretical Elementary Particle Physics
Messrs. Grisaru, Pendleton, Schnitzer and Schweber

PHYSICS 407. Experimental Solid State Physics
Messrs. Berko, Heller and Hohenemser

PHYSICS 408. Theoretical Solid State Physics *Messrs. Falkoff and Gross*

PHYSICS 409. Relativity*

PHYSICS 410. Mathematical Physics *Messrs. Grisaru and Schweber*

PHYSICS 411. Statistical Physics *Messrs. Falkoff and Gross*

PHYSICS 412. Astrophysics *Messrs. Golden and Nishida*

Politics

Objectives

The graduate program in politics, leading to the degree of Doctor of Philosophy, emphasizes comprehensive professional training by stressing both the fundamentals of the discipline grounded in the study of political thought and institutions and the requirements of method and analytical skills.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate training must be in a field of social sciences to be considered for admission to this program. Applicants are required to take the Graduate Record Examination.

*Not to be given in 1966-67.

Faculty

Professor NORTON E. LONG, *Chairman*; Professors LAWRENCE H. FUCHS, MAX LERNER, ROY C. MACRIDIS, JOHN P. ROCHE, KENNETH N. WALTZ; Visiting Professor KALMAN SILVERT; Associate Professors EUGENE J. MEEHAN, RUTH SCHACHTER MORGENTHAU, I. MILTON SACKS; Adjunct Associate Professor RICHARD L. SKLAR; Assistant Professors ROBERT BINSTOCK, ERICH GOLDHAGEN, WILLIAM M. GOLDSMITH,* DONALD HINDLEY,* SHERIDAN W. JOHNS, III, ISAAC KARMNICK, JOSEPH S. MURPHY,* ERIC A. NORDLINGER.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree may be awarded after completion of one year's residence, a minimum of eighteen credits in politics, including three of the "core courses," and proficiency in one foreign language. The department may require an oral examination prior to awarding the degree.

Doctor of Philosophy

Students should note certain special features of the program, in particular, (a) "core courses" which provide a common disciplinary foundation for all graduate students, (b) instruction in small seminars under close faculty supervision, (c) the encouragement of field work or supervised research in connection with dissertation research, (d) university teaching experience. Each student is assigned to a departmental adviser who will help him to plan his program of study.

Program of Study. The student must complete two years in residence and a minimum of forty-eight course credits. Of these forty-eight credits, nine or more may be taken in related fields, with the permission of the student's graduate adviser.

Language requirements. By the end of his first year of study, the student must demonstrate proficiency in one approved foreign language. Proficiency in a second language, or in a designated skill (statistics, computer programming), must be demonstrated before the fourth semester in residence.

Qualifying Examination. After completing residence requirements, the student will take a general qualifying examination which will cover three of four fields—American politics, political theory, comparative politics, and international relations. It is expected, however, that some proficiency will be demonstrated in the fourth field.

*On Leave, 1966-67.

To prepare for the qualifying examination, the student must take a minimum of twenty-four credits in the department, distributed as evenly as possible among the four fields and, in addition, must take three of the four "core courses."

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed his residence requirement, has passed the qualifying examination, has fulfilled the language requirement and when the subject of his dissertation has been approved by the department.

Dissertation and Defense. The dissertation will be completed under the supervision of the student's adviser and must have the approval of a departmental committee of at least two members. Twenty-four credits beyond the required forty-eight will be allowed for dissertation research. It is assumed that the writing of the dissertation will take at least one year. Finally, the student must successfully defend his dissertation at a final oral examination.

Courses of Instruction

Group I Basic "core courses"

POLITICS 201a. Political Philosophy

A systematic inquiry into the recurring themes of political analysis such as the state, justice, freedom, equality, and rights. *Mr. Kramnick*

POLITICS 202b. Empirical Political Sciences*

POLITICS 203bR. Comparative Political Analysis

Classification and typology of political systems; political organization, institutions and processes. *Mr. Macridis*

POLITICS 204b. International Politics*

Group II American Politics

POLITICS 121a. The Politics of Urban Areas

An examination of the evolution of political styles and ideologies, formal structures, and issues in American local politics. A major portion of the course will be devoted to an analysis of reforms, ranging from 19th century "good government" movements for eliminating "bosses and machines," to current programs for promoting "community mental health," revising "the opportunity structure," arranging special "participation" for the poor, and others in the development of policies and programs; and "saving" the central city. *Mr. Binstock*

POLITICS 128a. Public Administration and Public Policy*

POLITICS 156a. History of American Constitutional Law and Theory

See History 156a.

Mr. Levy

*Not to be given in 1966-67.

POLITICS 156b. History of American Constitutional Law and Theory

See History 156b.

Mr. Levy

POLITICS 157a. Judicial Power and American Politics

An examination in historical context of the role of the federal judiciary, particularly the Supreme Court, in shaping the political order, the ground-rules of American politics and ambiguously referred to as "constitutionalism." *Mr. Roche*

POLITICS 170a and b. American Political Thought***POLITICS 175a. The American Executive*****POLITICS 175b. Congress and the Legislative Process*****POLITICS 211b. The American Voter*****POLITICS 212aR. Trends in Constitutional Law**

A seminar. Recent developments in constitutional law; and analysis of some of the most important contemporary Supreme Court decisions. *Mr. Roche*

POLITICS 213b. Policy Formation

A seminar. A study of aspects of policy making with reference to various organs of decision making in the Federal Government. *Mr. Woll*

POLITICS 214a. Urban and Community Problems

A seminar. A study of urban politics; policy issues and questions of urban development and renewal. *Mr. Long*

POLITICS 215b. American Political Thought***POLITICS 216a. The Federal Administration*****POLITICS 217b. Contemporary Problems of American Federalism*****Group III Comparative Government****POLITICS 144a. Soviet Russia**

A general analysis of the government, foreign relations, and ideology of contemporary Russia. The analysis emphasizes the country's history from the origin of the Bolshevik movement to the present. *Mr. Johns*

POLITICS 152a. Political Parties

A comparative analysis of the structure and functioning of political parties and such factors as the political culture and social stratification as they pattern the operation of parties. *Mr. Nordlinger*

POLITICS 164a. Introduction to the Politics of Africa

A study of nationalism, political thought and political institutions in Africa. Consideration is given to the evolution of African nationalism and to the political implications of continuity and change in social and economic organization. *Mrs. Morgenthau and Mr. Johns*

*Not to be given in 1966-67.

POLITICS 165b. National and International Politics of Southern Africa

A study of the political structure of Southern Africa, including the Republic of South Africa, South-West Africa, the British Protectorates, Rhodesia, Zambia, Malawi, and the Portuguese territories. Analysis will focus upon the dynamics of race relations, the development of nationalisms, attempts at regionalism, and the nature of international involvement in Southern Africa.

Mr. Johns

POLITICS 166a. The Politics of Northern Latin America

An introduction to the government and politics of northern Latin America, i.e., Mexico, Central America and the Caribbean countries. Special emphasis is given to Mexico, Guatemala, Costa Rica, and Cuba.

Mr. Silvert

POLITICS 166b. The Politics of Southern Latin America

An introduction to the government and politics of South America. The course concentrates on Brazil, Argentina, and the Andean states of Bolivia and Peru.

Mr. Silvert

POLITICS 167a. The Government and Politics of East Asia***POLITICS 168b. International Politics of the Far East**

An historically oriented analysis of the forces underlying international relations in the Pacific area starting with the first impact of the Westerners into the area and progressing to the present. Soviet Asian policies; the strategic position of the newly emergent Southeast Asian states; Sino-Japanese conflict; America's stake in the Far East; the Asian Communist bloc; prospects for peace in the Pacific.

Mr. Sacks

POLITICS 169a. Government and Politics: Southeast Asia

A survey of the struggle for independence and the post-independence political problems facing the peoples of mainland and island Southeast Asia. The course concentrates on Viet Nam, Laos, Thailand, Malaysia, and Indonesia.

Mr. Sacks

POLITICS 171a. The Politics of Development***POLITICS 172a. Contemporary Europe: Politics, Culture and Society**

The struggle to give political direction to Western Europe; movements toward economic, military, and political integration; the cultural unities in European history and the new European society.

Mr. Lerner

POLITICS 173a. European Political Systems***POLITICS 173b. European Political Systems**

A seminar for the analysis of various theories and explanations for the operation of democratic political systems in Europe.

Mr. Nordlinger

POLITICS 231a. Ideologies and Political Movements***POLITICS 232bR. Politics in Developing States**

Intensive case studies of the factors connected with modernization in selected political systems.

Mrs. Morgenthau

POLITICS 233a. Comparative Political Systems***POLITICS 234b. Comparative Administration***

*Not to be given in 1966-67.

POLITICS 237a. Political Cultures: A Comparative Overview***POLITICS 238aR. Selected Problems in African Politics**

Advanced individual research into the contemporary political problems of selected African countries. Emphasis will be on the use of primary material.

Mrs. Morgenthau

POLITICS 238b. Selected Topics on Latin American Politics***POLITICS 239b. Selected Topics on Asian Politics*****POLITICS 240. Political Sociology**

An examination of the relations between class structure, economic rates of growth, alienation, social values, voluntary associations, socialization patterns, and attitudes.

Messrs. Macridis and Nordlinger

POLITICS 241. European Politics***Group IV International Politics****POLITICS 171b. International Communism**

Origins and development of the world Communist movement. Its ideology: Marxism, Leninism, Stalinism. The impact of the Communist power system on contemporary world politics, with special reference to the underdeveloped areas and newly emergent states.

Mr. Goldhagen

POLITICS 176a. International Organizations***POLITICS 176b. International Law*****POLITICS 178a. American Foreign Policy**

The problem of defining the objectives of American foreign policy; the effect of external conditions and internal politics on the making and execution of foreign policy.

Mr. Waltz

POLITICS 178b. Problems of National Security

An examination of alternate political, military, and economic strategies for securing national interests; a discussion of selected crises in American foreign policy since 1945.

Mr. Waltz

POLITICS 252a. Integration at the International Level***POLITICS 253b. Comparative Foreign Policy*****POLITICS 254aR. Contemporary Theories in International Relations**

A research seminar in the field of international relations. All students will write papers on aspects of a subject chosen for the semester, such as: international stability, the relation of conflict to violence, nuclear diffusion, foreign-aid policy, alliances, the behavior of defensive states, democratic politics and foreign policy.

Mr. Waltz

POLITICS 255b. Politics of National Identity in Multi-National States*

*Not to be given in 1966-67.

Group V Political Theory

POLITICS 152b. Methodology of Political Science*

POLITICS 195a. Ancient and Medieval Political Theory

A general survey of political thought from classical Greek and Roman sources through the Christian Middle Ages and the beginnings of the nation-state.

Mr. Kramnick

POLITICS 196b. Modern Political Theory*

A general survey of political thought from the sixteenth century through the nineteenth century. The course will deal with the classics of political writing from Machiavelli to Marx.

Mr. Kramnick

POLITICS 155a. Current Trends in Political Analysis*

POLITICS 197aR. Contemporary Political Theory

A systematic analysis of contemporary problems in political theory. *Mr. Meehan*

POLITICS 271a. Current Issues in Political Thought*

POLITICS 272a. Philosophy and Method of Politics

The methodology of politics with special attention to the relevance of philosophy of science for political studies.

Mr. Meehan

POLITICS 272b. Research Methods and Techniques*

POLITICS 273a. Major Political Philosophers*

POLITICS 274a. Organizational Theory and Administration*

POLITICS 275b. Community, Power, and Decision Making*

POLITICS 276a. Responsible Political Evaluation*

POLITICS 277b. Toward a General Theory of Politics*

POLITICS 301. Readings in Politics

Staff

POLITICS 400-408. Dissertation Research

Independent research for the Ph.D. degree.

400. *Mr. Fuchs*405. *Mr. Waltz*401. *Mr. Lerner*406. *Mr. Meehan*402. *Mr. Long*407. *Mrs. Morgenthau*403. *Mr. Macridis*408. *Mr. Sacks*404. *Mr. Roche*

Psychology

Objectives

The graduate program in psychology leading to the degree of Doctor of Philosophy is designed for students of promise in the field of general psychology. Theoretical, historical and experimental studies and research

*Not to be given in 1966-67.

projects rather than formal course training will be emphasized. Courses and seminars in special areas, are offered to all graduate students, but no specialized training or special degrees are given. Graduate programs will be arranged individually in consultation with faculty members.

All regular graduate students must pursue programs leading to the Ph.D. degree. Special students, who are not candidates for a degree, may occasionally be admitted; such admissions are for one year at a time. Candidates for the degree of Master of Arts are not admitted, although that degree may be granted when such an action seems in the best interest of the student. In these cases, the degree is based on the successful completion of a year of regular graduate work, the demonstration of a reading proficiency in one foreign language, and the completion of a Master's thesis. A paper presented before a learned society or one accepted for publication by a learned journal may be accepted in lieu of a Master's thesis. A qualifying examination may also be required.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

An undergraduate major in psychology is not required, although it will be favored. Students with inadequate preparation may make up their deficiencies during their first year, but without residence credit. Preference will be given to students who have completed, in addition to basic courses in theoretical and experimental psychology, a broad liberal arts program with some training in the natural and social sciences. Students will be admitted on a competitive basis which will include evaluation of previous academic record and the results of the Graduate Record Examinations (Advanced, Aptitude and Profile Tests), and the Miller Analogies Test.

Faculty

Professor RICARDO B. MORANT, *Chairman*: Experimental psychology. Developmental psychology. Perceptual mechanisms. Sensation and perception.

Professor EUGENIA HANFMANN: Clinical psychology. Personality theory.

Professor RICHARD M. JONES: Educational psychology. Social psychology. Psychotherapy.

Professor GEORGE A. KELLY: Personality theory. Theory of personal constructs. Clinical psychology.

Professor ABRAHAM H. MASLOW: Personality theory. Transcendence theory. Experiential approaches to personality.

Professor HARRY RAND: Clinical practice and training.

Professor MARIANNE L. SIMMEL: Sensory physiology. Cognitive processes. Perception.

Associate Professor JAMES B. KLEE: Motivation and emotion. Symbolic and cognitive processes. Human and animal learning.

Associate Professor JEROME WODINSKY: Comparative psychology. Learning theory. Sensory physiology.

Assistant Professor HARVEY LONDON: Social psychology. Group dynamics.

Assistant Professor MELVIN SCHNALL: Child and developmental psychology.

Assistant Professor SIDNEY STECHER: Psychophysics. Experimental psychology.

Assistant Professor DENISE I. THUM: Comparative psychology. Learning. Experimental psychology.

Adjunct Lecturer DONALD B. GIDDON: Physiological psychology. Psychosomatic relations.

Lecturer JOHN W. SENDERS: Statistics.

Degree Requirements

Doctor of Philosophy

Four years of full-time graduate study are usually required for the Ph.D. An individual program will be arranged in consultation with each student. During the first two years, the student will carry fifteen credit units per semester. The ordinary program includes (a) three units in Psychology 300 (Departmental Colloquium); (b) three units in Psychology 200 (Research); (c) Psychology 290-297 (Readings); and (d) three units in each of two other seminars or courses at the 100 level or above. In addition, students may audit any other courses or seminars with the permission of the instructor.

Evaluation of Proficiency. A. Students are expected to achieve a thorough knowledge of fundamentals in certain areas of psychology during their first three years. Two general areas and six special areas have been defined by the faculty as follows:

a. *General Areas:*

1. History and Systems
2. Statistical Methods

b. *Special Areas:*

Group A: Experimental Areas

1. Sensation and Perception
2. Learning and Thinking
3. Physiological and Comparative Psychology

Group B: Dynamic Areas

4. Personality and Motivation
5. Psychopathology and Clinical Psychology
6. Child and Social Psychology

The student's level of proficiency in the two general areas will be determined by written examinations. In addition, the student will select three areas, two from one of the groups, A or B, listed above and one from the other group, B or A, in which he will be examined by a committee of the faculty. These latter examinations may be oral or written, at the option of the student.

Some competence is required also in the areas not selected for examination. Successful completion of a relevant undergraduate or graduate course or seminar will ordinarily satisfy this requirement, but a formal paper or examination may be requested.

Examinations may be taken separately. Written examinations will ordinarily be offered three times a year, in October, January and May. Oral examinations will be offered throughout the academic year and summer by individual arrangement with the faculty. Students wishing to take oral or written examinations should register with the department secretary three weeks before the examination is to be scheduled.

Examinations will be based on the content covered in the reading lists prepared by the faculty each year. A designated faculty member will be available for consultation concerning preparation for any given examination. This preparation may take the form of a reading course.

Students are expected to take at least two examinations prior to the end of their third term in residence, and to fulfill all requirements described in this section by the end of the third year in residence.

Individual Research. Each student is expected to engage in collaborative or independent research, with the aim of developing competence in the planning, practice, and evaluation of research. Research work should begin during the first year of residence.

Teaching. Each student, whether or not he receives remuneration as a teaching assistant, is expected to do some undergraduate teaching to develop competence in teaching. Psychology 201c is designed to further the student's understanding of the teaching process.

Language Requirement. The demands of the field of the dissertation will determine the foreign languages that the student is expected to master. Reading proficiency in at least one foreign language is required for the Ph.D. degree. This language must be one in which substantial psychological literature exists. Language examinations are offered by the department four times a year, usually in September, December, February and May. Stu-

dents are expected to satisfy the language requirement as soon as possible. By regulation of the Graduate School, a student who has not passed an examination in at least one foreign language by the end of his first year of study will not be eligible for financial aid from the university for the second year.

Admission to Candidacy. A student may be admitted to candidacy for the doctorate when he has passed all departmental qualifying examinations.

Dissertation and Defense. Following the completion of all examinations, and before the student begins to concentrate on dissertation research, he will prepare a prospectus of the proposed study, in consultation with a faculty dissertation sponsor. Upon approval by the faculty, a dissertation committee of three or more faculty members will be appointed, including the dissertation adviser. The committee will advise the student in his dissertation work and from time to time will report his progress to the faculty.

The student may, if he wishes, ask the department for *formal acceptance* of his prospectus. A prospectus that is to be formally accepted must provide a detailed outline of the experimental work to be done (if any) and of its theoretical basis. Such a prospectus will be voted upon by all members of the department. Once the department has formally accepted a prospectus, it will consider itself bound to accept the resulting dissertation as well, regardless of the experimental results, provided that the proposed work has been carried out.

When the student has presented a dissertation prospectus, whether or not he asks for formal acceptance, his dissertation committee will be responsible for evaluating his competence in the field of psychology within which the dissertation falls. This field will ordinarily include more than one of the areas defined above and may include such related areas as sociology, linguistics, one or more physical sciences, etc. The committee may, at its discretion, require a written examination in the thesis field as a whole or in any part of it.

The dissertation should provide evidence of originality, scholarship and research ability. It should be a contribution to knowledge, ordinarily an experimental research, but not necessarily so. Upon submission to the chairman of the department of a copy of the thesis, signed by all three members of the thesis committee, and a successful defense of the thesis before all members of the department, the award of the Ph.D. will be recommended to the Faculty Council of the Graduate School.

Courses of Instruction

PSYCHOLOGY 115a. Experiential Approaches to the Study of Personality

A survey of efforts at self-analysis, self-therapy and self-growth. Dream and symbol psychology; peak, mystic and psychedelic experience; archaic and prera-tional cognition. Recovery of the preconscious.

Enrollment limited to twenty students.

Mr. Maslow

PSYCHOLOGY 118a. Physiological Psychology

Those aspects of physiology most relevant to psychological investigation: the anatomy and physiology of receptor and effector organs, the neuron and synapse, sensory and motor neural pathways, the integrative activity of the central nervous system, the autonomic nervous system and the action of hormonal factors.

Mr. Stecher

PSYCHOLOGY 119b. Comparative Psychology

Comparison of the behavior of various species, including man, in an evolutionary perspective.

Mr. Wodinsky

PSYCHOLOGY 120a. Experimental Psychology

Individual or group research carried out under supervision. Techniques of experimentation, experimental design. 4 credits.

Mr. Morant and Miss Thum

PSYCHOLOGY 121. History of the Concept of Human Nature*

Ideas on the nature of man developed in western society since the end of the seventeenth century.

PSYCHOLOGY 122b. Advanced Experimental Psychology

Individual research carried out under supervision. Analysis of the classical and newer psychophysical methods.

Miss Thum

PSYCHOLOGY 130a. Psychology of Problem Solving and Learning

A study of the creative process, its background and consequences and its relation to perception and learning theory.

Mr. Klee

PSYCHOLOGY 131b. Psychology of Symbolic Processes

Culture as studied primarily from the frame of reference of psychology. Dreams, myths, and art as created, expressed, and as used in language, the humanities, and sciences will be studied as psychological data. The place of psychology in relation to the humanities and the other sciences will be evaluated.

Mr. Klee

PSYCHOLOGY 132b. Psychology of Emotions

A consideration of the value dimension of the individual's dynamic relation to the world about him in both its positive and disruptive aspects.

Enrollment limited to fifteen students.

Mr. Klee

PSYCHOLOGY 133a. Choice, Will and the Ego

A revaluation of the "active person." Choice, freedom, and responsibility will be considered as psychological problems. A study will be made of the relevance to choice and action of hedonics, knowledge, reason, and religion, and of man's relation to his perception of good and evil, sickness and health. An assessment of the individual's role in disease and conflict.

Enrollment limited to upperclassmen.

Mr. Klee

*Not to be given in 1966-67.

PSYCHOLOGY 134a. Abnormal Psychology

A socio-psychological and dynamic approach to behavior pathology with emphasis on current theories of pathogenic family structure. *Miss Thum*

PSYCHOLOGY 135a. Applications of Psychoanalytic Concepts*

Psychoanalytic theory will be explored in its application to literature, biography and the creative process.

PSYCHOLOGY 137b. Personality

Selected personality variables and how they have been investigated. Topics will be studied so as to show their relationship to influential psychological theories.

Enrollment limited to fifteen students.

Mr. London

PSYCHOLOGY 138b. Theories of Personality*

A survey of current personality theories and their implications for research, for human development and for social institutions. The preliminary formulation of the student's own personality theory, both on implicit and explicit levels.

PSYCHOLOGY 139b. The Self and Identity***PSYCHOLOGY 140aR. Learning and Behavior**

Current theories of learning will be explored in the light of experimental evidence derived from human and animal studies.

Enrollment limited to fifteen students.

Mr. Wodinsky

PSYCHOLOGY 141aR. Biological Bases of Motivation

Topics to be treated include hunger, thirst, migration, sexual behavior and parental behavior. Evidence from biology, neurophysiology and endocrinology will be evaluated.

Enrollment limited to fifteen students.

Miss Thum

PSYCHOLOGY 142b. Psychosomatics

The interrelationships of psychological, social and cultural factors in physical disease. Topics include psychophysiological mechanisms in disease, physiological correlates of mental disease and "somato-psychic problems."

Mr. Giddon

PSYCHOLOGY 143a. Cognitive Processes

Experiments in human learning, thinking problem solving.

Prerequisite: Psychology 50b or permission of the instructor.

Enrollment limited to fifteen students.

Miss Simmel

PSYCHOLOGY 144b. The Psychology of Language

Language development; names, concepts and symbols; expressive language; metaphor; grammar and syntax; problems of translation; pathology of language.

Enrollment limited to fifteen students.

Miss Simmel

PSYCHOLOGY 145a. Psychopathology in Childhood

Theoretical and therapeutic implications of disorders in childhood, focusing on mental retardation and childhood psychosis.

Enrollment limited to fifteen students.

Mr. Schnall

*Not to be given in 1966-67.

PSYCHOLOGY 146a. Psychopathology and Cognition

Alterations of perceptual and conceptual processes in schizophrenia, in brain injury, under the influence of drugs, and under conditions of so-called sensory isolation.

Enrollment limited to fifteen students.

Miss Simmel

PSYCHOLOGY 147b. Systematic Psychology

A seminar focusing on the validity and purpose of contemporary theoretical formulations.

To be announced

PSYCHOLOGY 148a. Advanced Child Psychology*

The dynamic aspects of child behavior and development will be studied, discussed and applied in demonstrations.

Enrollment limited to fifteen students.

PSYCHOLOGY 149b. Phenomenological Psychology*

The implications of a phenomenological viewpoint for problems in personality, perception and cognition. Cassirer's philosophy of symbolic forms will be studied to see how a radical phenomenology can be grounded in epistemological and ontological principles.

PSYCHOLOGY 150b. Utopian Social Psychology

How good a society does human nature permit? Reading in Utopian literature and in normative social psychology.

Mr. Maslow

PSYCHOLOGY 151a. Political Behavior*

This seminar will focus on several psychosocial variables related to political behavior. An empirical project related to the 1964 presidential election will be required of all students.

Enrollment limited to fifteen students.

PSYCHOLOGY 152b. Group Dynamics

A consideration of classical and current experimental approaches to the study of human interaction. Topics will include: history of group dynamics; conformity; obedience; group cohesiveness; social communication; social deviance; group affiliation; social determinants of emotion, etc.

Enrollment limited to fifteen students.

Mr. London

PSYCHOLOGY 153b. Developmental Approaches to Cognition*

Examination of major developmental principles and descriptive systems and their utility in the examination of perception, language and thought. Emphasis on the work of Werner and Piaget.

Enrollment limited to fifteen students.

PSYCHOLOGY 154a. The Psychology of Personal Constructs

The structure, development and potentialities of personal construct theory. The theory's philosophical substructure. Utilization of the theory in personal and social affairs.

Enrollment limited to fifteen students.

Mr. Kelly

*Not to be given in 1966-67.

PSYCHOLOGY 155b. Advanced Educational Psychology

Dynamic psychology as applied to educational practice.

For seniors enrolled in the Education Program or others with the consent of the instructor.

Enrollment limited to fifteen students.

Mr. Jones

PSYCHOLOGY 156b. Verbal Learning and Memory

Experiments and theories in verbal learning and retention will be reviewed. Topics will include developments along various theoretical lines and will assess the current work in short-term memory.

Enrollment limited to fifteen students.

Mr. Stecher

PSYCHOLOGY 159b. Perception

Study of the problems, theories and research in visual, auditory and tactile perception. Emphasis will be on the classical problems in each area. For example, the phenomenal constancies, depth perception, localization.

Enrollment limited to fifteen students.

Mr. Stecher

PSYCHOLOGY 161. Field Work in Clinical Psychology*

PSYCHOLOGY 200a, b, and c. Individual Research Projects *Mr. Morant and Staff*

PSYCHOLOGY 201c. Seminar in the Teaching of Psychology*

PSYCHOLOGY 206a. Seminar in Learning *Mr. Wodinsky*

PSYCHOLOGY 207b. Seminar in Perception *Mr. Morant*

PSYCHOLOGY 208a. Seminar in Cognition *Miss Simmel*

PSYCHOLOGY 209a. Seminar in Physiological and Comparative Psychology*

PSYCHOLOGY 210aR. Advanced Psychological Statistics *Mr. Senders*

PSYCHOLOGY 212b. Methodology for Research in Personality

Modes of observation, simple experimental intervention, the basic methods of experimental control, the interview, the formulation and testing of hypotheses, use of personal experience, the function of prediction and the implications of confirmation and disconfirmation.

Mr. Kelly

PSYCHOLOGY 213. Introduction to Projective Techniques***PSYCHOLOGY 214a. History of Psychological Thought*****PSYCHOLOGY 215b. Psychoanalytic Theory***

PSYCHOLOGY 216a. Selected Clinical Topics *Miss Hanfmann*

PSYCHOLOGY 217b. Research Seminar in Clinical Psychology*

PSYCHOLOGY 218a. Seminar in Social Psychology *Mr. London*

PSYCHOLOGY 219a. Approaches to Psychotherapy *Mr. Jones*

PSYCHOLOGY 220. Supervised Individual Field Work *Mr. Jones and Staff*

PSYCHOLOGY 221. Clinical Psychopathology *Mr. Rand*

PSYCHOLOGY 222a. Seminar in Conflict and Frustration*

*Not to be given in 1966-67.

PSYCHOLOGY 290-299. Readings in Psychological Literature

Staff

- 290. History and Systems
- 291. Statistical Methods
- 292. Sensation and Perception
- 293. Learning and Thinking
- 294. Physiological and Comparative Psychology
- 295. Personality and Motivation
- 296. Psychopathology and Clinical Psychology
- 297. Child and Social Psychology
- 298. Advanced Readings in Experimental Psychology
- 299. Advanced Readings in Dynamic Psychology

PSYCHOLOGY 300. Department Colloquium and Research Seminar

Mr. Morant and Staff

PSYCHOLOGY 301. Seminar in Advanced Psychological Topics I*

PSYCHOLOGY 400-411. Dissertation Research

Independent research for the Ph.D. degree.

- | | |
|---------------------------|--------------------------|
| 400. <i>Miss Hanfmann</i> | 406. <i>Mr. Morant</i> |
| 401. <i>Mr. Jones</i> | 407. <i>Miss Schnall</i> |
| 402. <i>Mr. Kelly</i> | 408. <i>Miss Simmel</i> |
| 403. <i>Mr. Klee</i> | 409. <i>Mr. Stecher</i> |
| 404. <i>Mr. London</i> | 410. <i>Miss Thum</i> |
| 405. <i>Mr. Maslow</i> | 411. <i>Mr. Wodinsky</i> |

Sociology

Objectives

The graduate program in sociology is primarily a doctoral program and is designed for students who intend to devote themselves to teaching and research in sociology. The student may, by satisfying certain requirements, receive the M.A. degree during his course of study. The general objective is to educate students in the major areas of sociology with specialization in several of them.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Sociology Department.

In addition, all prospective students are encouraged to arrange for an interview with a member of the Sociology faculty and to submit written material (papers, etc.) representative of their best work, which need not be, however, of a sociological nature.

*Not to be given in 1966-67.

Faculty

Associate Professor MAURICE R. STEIN, *Chairman*: Communities. Sociology of literature.

Professor LEWIS A. COSER: Sociological theory. Political sociology.

Professor EVERETT C. HUGHES: Social organization. Race and ethnic relations. Occupations and work systems.

Visiting Professor PAUL KECSKEMETI: Social theory. Political sociology.

*Professor MORRIS S. SCHWARTZ: Social psychology. Social psychiatry. Applied sociology.

*Professor KURT H. WOLFF: Sociological theory. Sociology of knowledge.

Associate Professor PHILIP E. SLATER: Family. Small groups.

**Associate Professor ROBERT S. WEISS: Methodology. Sociology of occupations.

Assistant Professor FREDERICK F. ABRAHAMS: Political behavior. Methodology. Survey methods.

Assistant Professor GORDON FELLMAN: Social psychology. Stratification. Comparative sociology.

Assistant Professor LARRY ROSENBERG: Field methods. Social psychiatry.

*Assistant Professor B. SVI SOBEL: Sociology of religion. Sociology of the Jews.

Assistant Professor SAMUEL E. WALLACE: Field methods. Violence.

Assistant Professor IRVING K. ZOLA: Deviance. Sociology of health and illness.

Visiting Lecturer ALVIN ZALINGER: Personality and social structure. African studies.

In addition to the general fields represented by the above instructors, there are two special training programs: one in Field Research and a second in the Social Organization of Medical Care. For further information, please write to the Sociology Department.

Degree Requirements

Doctor of Philosophy

Program of Study. All entering students are expected to enroll in courses prescribed for the first year. If credit is granted for graduate work done at other institutions, normally it will be applied to the second year. In exceptional circumstances, the student may request departmental approval to substitute credit for work done elsewhere for the courses required in the first year. Substitution may depend upon examination in the course to be waived.

*On Leave, 1966-67.

**On Leave, Fall Term.

The program for the Ph.D. degree is ordinarily completed in three stages:

First Year

Fall Term: Sociology 200a; Sociology 203a; Sociology 125a.

Spring Term: Sociology 200b; Sociology 203b; Sociology 210b.

After discussion with his adviser, the student may postpone taking either Sociology 125a or Sociology 210b to the second year.

During the first year, the student is allowed, in addition to the above program, *one* elective half-course which may be taken in either term.

Second Year

Sociology 300c and six elective half-courses, three of which should be seminars or reading courses.

During the second year, after the student has passed one language examination and has completed three terms in residence at full-time, he may petition the department chairman for admission to candidacy for the M.A. degree. If the department judges that preparation for the degree has been sufficient, the student will be invited to submit to the department two papers written during this period for approval as Master's papers.

Third Year

Sociology 400: Dissertation Research.

Residence Requirement. The minimum residence requirement for the degree of Doctor of Philosophy is two years. It is expected that the Ph.D. will be earned within five years.

Language Requirements. Candidates for the Doctor's degree must demonstrate proficiency in two foreign languages, ordinarily French and German. Another language may, upon petition to the department, be substituted for either French or German.

Qualifying Examinations. All graduate students will be required to take qualifying examinations during their third year in the program with the exception of those students who have received credit for work done elsewhere. Those students will take the qualifying examinations during the second year in the program. The examinations are designed to test competence in three broad fields of sociology. The choice of fields will be determined by the student in consultation with his advisor and will be subject to departmental approval.

Except in the case of transfer students where a special date may be set, the initial choice of fields should be made by March 15 of the second year in residence. After the fields have been approved and an examining committee appointed, the student will meet with the committee to determine the literature for which he will be held responsible. This initial meeting shall take place at least six months prior to the examination. The exami-

nation itself will be a written one which will be completed on a take-home basis.

Admission to Candidacy. A student shall be eligible for admission to candidacy when he has fulfilled his residence requirements, demonstrated proficiency in two foreign languages, passed the departmental qualifying examination, and had his dissertation proposal approved.

Dissertation and Final Oral Examination. The candidate will be required to prepare a prospectus for his dissertation before he begins concentrated work. This prospectus must be prepared within six months after he has passed the qualifying examinations and must be approved by the student's advisory committee and by the department.

When the dissertation is accepted by the department, a final oral examination will be scheduled, wherein the candidate must successfully defend his dissertation before the department members and at least one member of the faculty engaged in graduate instruction outside the department.

Courses of Instruction

SOCIOLOGY 100a. Sociology of the Community*

The contrast between the pre-industrial and the modern industrial community. The institutional structure of community life, its internal structure and external sources of control and domination. Emphasis on the psychological and social foundations of modern community life. Illustrations from European and American communities.

SOCIOLOGY 101a. Sociology of Conflict and War

The functions of social conflict in different types of societies and different institutional settings, in large social structures and smaller groups. Racial and ethnic conflicts, marital conflicts, political conflicts, war.

Mr. Coser

SOCIOLOGY 102b. Social Psychiatry

The interplay between the social formation of the self and institutional participation. The processes by which the individual incorporates through language and action the personal styles available to his experience and assessment; types of personal identity and mechanisms of defense in stable and changing societies, with emphasis on Western personality.

Mr. Rosenberg

SOCIOLOGY 103a. Sociology of Religion*

Sociological analysis of contemporary and historical religious institutions and experiences. Religious leadership and followership; conversion; sect, denomination, and church; religion, society and politics; leading contemporary schools of theology.

SOCIOLOGY 104b. Sociology of Education*

Functional bases of educational systems; their formal and informal organization; their relations to family, economy, polity, and social classes.

*Not to be given in 1966-67.

SOCIOLOGY 105b. Sociology of Modern Anti-Semitism*

Sociological analysis of contemporary forms of anti-Semitism. Various theories, both past and present, attempting to explain the phenomenon will be examined critically.

Admission by consent of instructor.

SOCIOLOGY 106b. Sociology of Literature

The relations between society and literary forms in selected historical periods. Emphasis on the relations between problems and methods in inquiry as presented by sociological and humanistic students of man.

Prerequisite: Permission of the instructor.

Mr. Stein

SOCIOLOGY 107b. Advanced Social Psychology

Human behavior from a combined psychodynamic and sociological point of view, with special emphasis on socialization and the relations between the individual and the collectivity.

Mr. Zalinger

SOCIOLOGY 109a. Social Causation*

The nature and significance of causal inquiry, especially into social phenomena. Explanation, understanding, interpretation. Case study and generalization. Social causation and social change.

SOCIOLOGY 110a. Sociology of Knowledge

History and historical interpretation of the sociology of knowledge, with particular emphasis on German and recent American literature.

Mr. Kecskemeti

SOCIOLOGY 111a. Political Sociology Seminar*

The political community in seventeenth century England; symbolic expression; moral and intellectual foundations; social and economic forces; the interpretation of transition.

SOCIOLOGY 112b. Social Stratification

Nature and kinds of stratification systems, social class cultures, social mobility, political leadership; sociological theories of stratification; some social psychological aspects of stratification.

Mr. Fellman

SOCIOLOGY 114a. Modern Bureaucracy***SOCIOLOGY 115b. Sociology of the American Churches***

The major sociological and theological characteristics of the American churches; church membership and church organization; the relationship of the churches to the power structure and to each other; Catholics and Jews; the "majority" churches in a pluralistic society.

SOCIOLOGY 116b. Multi-Ethnic Societies

Comparative study of multi-racial (cultural, ethnic, religious) societies in various parts of the world, but with emphasis on the United States. Their structures; problems and conflicts of personal identity; relations among people of various categories; ideologies; conflict, movements and change.

Mr. Hughes

SOCIOLOGY 117a. Sociology of Work and Occupations*

A comparison of work and occupational systems in various cultures. Social organization of occupations and the place of work in the life of the individual.

*Not to be given in 1966-67.

SOCIOLOGY 118a. Social Institutions

Development and changes of various institutions characteristic of North American society, with some attention to other societies. Their origins, the contingencies to which they are subject, their interrelations, and present situations. Some special attention to the educational, medical, and social service complexes.

Mr. Hughes

SOCIOLOGY 122a. Sociology of Power

Sociological analysis of power relations and systems, exploring the literature on the theory and practice of power, with special attention to statements by the major social theorists.

Mr. Zalinger

SOCIOLOGY 122b. Comparative Political Sociology

Sociological analysis of power systems and political communities with special attention to systems based on violence and organized fear.

Mr. Abrahams

SOCIOLOGY 123a. Ideology and Social Movements

Effect of political events and social processes on political thought and action in the twentieth century. Social functions of political ideologies. Structure and orientation of organizations intending to cause social change.

Mr. Kecskemeti

SOCIOLOGY 125a. Quantitative Methods in Research

The uses of statistics in the organization, interpretation, and presentation of research data, with emphasis on the ideas underlying the development and use of statistical techniques.

Mr. Abrahams

SOCIOLOGY 126a. Sociology of Deviance

Deviance as a social process, its nature and conception, its functional as well as dysfunctional aspects. Survey of theory and research. Concentration on selected instances of individual and social pathology.

Mr. Zola

SOCIOLOGY 126b. The Institutions of Social Control

Focus is primarily on the social and institutional response to deviance, however defined, once it occurs. The formal and informal sanctions, the range of punishments from norms to laws, from hospitals to prisons. The agents of social control—the police, the F.B.I. and the other “helping” professions.

Mr. Zola

SOCIOLOGY 130b. The Family

The family in relation to its societal context and the personality development of the child. Cross-cultural materials will be emphasized.

Mr. Slater

SOCIOLOGY 132b. American Social Patterns

The general types of role relationships developed in the course of an individual's life, including relationships with strangers, work associates, friends, kin will be discussed. Attention will be directed to the structures within which these relationships take place, their assumptions, and their typical emotional content. Also to be discussed will be typical dramas and dilemmas encountered within these relationships.

Mr. Weiss

SOCIOLOGY 135a. Group Process

Interpretation of interpersonal behavior and group development, based in part on observation of the discussion group itself. Readings will include material from psychology and social anthropology as well as sociology.

Mr. Slater

SOCIOLOGY 135b. Advanced Group Process

A continuation of Sociology 135a.

Open to students who have taken Sociology 135a or with permission of the instructor. *Mr. Slater*

SOCIOLOGY 140a. Population and Human Ecology

An exploration of the theoretical bases involved in the demographic transition from pre-modern to modern conditions of fertility, mortality, and rate of population growth. Emphasis will be given to the actual demographic history of the component parts of the Western World and Japan, together with coverage of the population control programs in underdeveloped nations. The course will also provide an introduction into various techniques of demographic analysis, such as life tables, standardization systems, crude and age-specific rates, cohort fertility, and censuses. *Mr. Lazerwitz*

SOCIOLOGY 190b. Social Organization of Medical Settings*

An analysis of the structural arrangements of medical practice and of medical settings. Problems of communication and role relationships among professionals and between patients and medical personnel will be examined. The impact of structures and role relationships on quality and quantity of medical care and on use of resources will be analyzed.

SOCIOLOGY 191a. Health, Community, and Society*

An exploration into the interrelationships of the nature of society and societies on the existence and treatment of health and illness. Topics include: conceptions of health and illness, patient careers, treatment institutions and practices, and the place of social science in medicine.

SOCIOLOGY 192. Sociology of the Medical Professions*

This course will provide an analysis of the key occupational groups in medicine, as well as of quasi and marginal practitioners. The selection, recruitment and training of those groups will be examined and the strategic points in their careers will be considered.

SOCIOLOGY 193b. Demographic, Ecological, and Economic Factors in Medical Care

Community health programs and the current emphases of public health practice will be described. The structure and provision of health services in other cultures will be considered and compared with those in the United States.

Mr. Richardson and Staff

SOCIOLOGY 194. Methods of Social and Economic Research in Medical Care*

The utility and application of sociological, economic and epidemiological methods will be discussed. Problems of measurement, design and analysis will be examined as well as the practical problems in implementing studies in the field of medical care.

SOCIOLOGY 195. Field Work in Medical Settings

Credit hours to be arranged.

Messrs. Miller, Zola and Staff

SOCIOLOGY 200. Classical Sociological Theory

Study of major sociologists, such as Comte, Spencer, Marx, Durkheim, Pareto, Weber, Simmel, Ward, Ross, Sumner, Park, Mannheim, in their historical setting, with special attention to their substantive concerns and methodologies.

1st sem., Mr. Stein

2nd sem., Mr. Coser

*Not to be given in 1966-67.

SOCIOLOGY 203. Field Methods in Sociological Research

Field study with opportunity for individual and group research. Students will collect their own data and analyze them. *Messrs. Hughes, Wallace and Rosenberg*

SOCIOLOGY 210b. Survey of Research Methods

This course will discuss: a philosophy of science useful for understanding social research; conceptual models available for organizing data; research strategies, including the case study, exploratory approaches, survey research, and possible experimental designs. *Mr. Weiss*

SOCIOLOGY 214c. Sociology of College Education

Sociology and social psychology of the teaching and learning processes in higher education, with special focus on classroom teaching. *Messrs. Fellman, Zola and Staff*

SOCIOLOGY 215a. Sociology of the Intellectuals*

Institutional settings for intellectual life since the eighteenth century. The salon, the coffeehouse, the scientific society, the reading public, the commercialization of writing, bohemia, reviews and little magazines. The men of knowledge and the men of power. The modern intellectual in the world of bureaucracy.

SOCIOLOGY 216b. Seminar on Modern Revolutions

Mr. Kecskemeti

SOCIOLOGY 217b. Education and Social Change

An examination of education as a dynamic in social change. Special attention will be paid to the resocialization functions of educational institutions in developing nations, and to the consequences of educational changes for other institutional orders. *Mr. Zalinger*

SOCIOLOGY 218a. Seminar on Social Protest and Urban Change

A study of proposed changes such as urban renewal and highway construction and the politics and sociology of protest movements against them. Field work on relevant issues in the Boston area will be a major focus of the seminar.

Enrollment limited to fifteen students.

Mr. Fellman

SOCIOLOGY 219b. Seminar on the Family

A comparative analysis of nuclear family patterns utilizing historical and cross-cultural material. *Mr. Slater*

SOCIOLOGY 223b. Sociology of Poverty

Mr. Rosenberg

SOCIOLOGY 224b. Aspects of Social Control in Religious and Secular Utopian Communities*

An analysis of the sociological structure of utopian communities demonstrating similarities and differences between the secular and religious types and their relationships to the broader societal contexts from which they emerge. The course will emphasize a discussion of the modes and processes of social control developed by the various movements.

SOCIOLOGY 225b. Applied Sociology Seminar*

The application of social science principles to the solution of practical problems in such fields as community organization, technological change, urban and rural development, industrial relations, mental and public health.

Admission by consent of instructor.

*Not to be given in 1966-67.

SOCIOLOGY 226b. Seminar in Social Psychology*

Major problems and issues in the field of social psychology; recent research; contemporary theoretical developments.

SOCIOLOGY 227a. Seminar on Occupations

Problems in the social organization of various professions and work systems, with special attention to the medical and health professions. The selection, recruitment, and training of these groups will be examined, and the strategic points in their careers will be considered.

Messrs. Hughes, Miller and Staff

SOCIOLOGY 228b. Some Pre-theoretical Problems of Sociology*

Sociological aspects of sociology. Relations between philosophical and methodological problems of sociology. Conditions of constructing sociological theory.

Major background readings for student papers: Maurice Natanson, ed., *Philosophy of the Social Sciences*; Alfred Schutz, *Collected Papers*, Vos. I and II.

SOCIOLOGY 229. Research Seminar: The Social and Personal Determinants of Illness*

Examination of ongoing research stressing the application and integration of sociological and psychological levels of analysis. Individual projects utilizing the available data on physical and mental illness will be carried out.

SOCIOLOGY 230-245. Readings in Sociological Literature

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|--------------------|---------------------|
| 230. Mr. Coser | 238. Mr. Stein |
| 231. Mr. Fellman | 239. Mr. Wallace |
| 232. Mr. Hughes | 240. Mr. Weiss |
| 233. Mr. Jones | 241. Mr. Wolff |
| 234. Mr. Schwartz | 242. Mr. Zalinger |
| 235. Mr. Rosenberg | 243. Mr. Zola |
| 236. Mr. Slater | 244. Mr. Kecskemeti |
| 237. Mr. Sobel | 245. Mr. Abrahams |

SOCIOLOGY 300c. Colloquium

The purpose of the colloquium is to give staff members, sociologists from other institutions, and post-M.A. students the opportunity to present current research, tentative hypotheses, and more general ideas and positions concerning the study of society.

SOCIOLOGY 301c. Advanced Field Research

A second year course in methods of field research. Students will be placed as participant observers in a number of different institutions and will be individually supervised in their field work.

Mr. Wallace

SOCIOLOGY 400. Dissertation Research Seminar

Open to all advanced students.

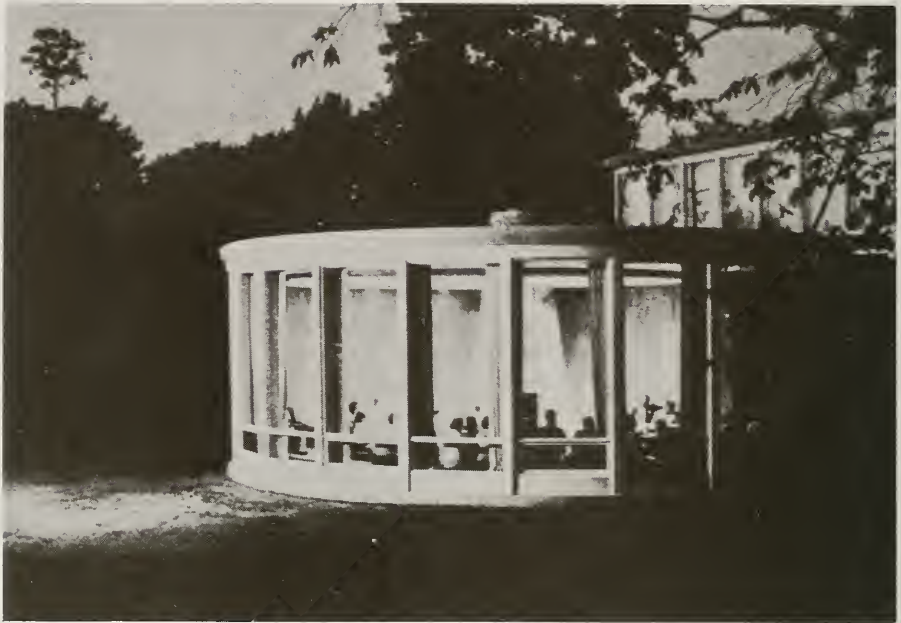
Messrs. Stein, Zola and Staff

SOCIOLOGY 401-413. Dissertation Research

Independent research for the Ph.D. degree.

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|--------------------|-------------------|
| 401. Mr. Coser | 408. Mr. Stein |
| 402. Mr. Fellman | 409. Mr. Wallace |
| 403. Mr. Hughes | 410. Mr. Weiss |
| 404. Mr. Schwartz | 411. Mr. Wolff |
| 405. Mr. Rosenberg | 412. Mr. Zola |
| 406. Mr. Slater | 413. Mr. Abrahams |
| 407. Mr. Sobel | |

*Not to be given in 1966-67.



Fellowships

Maxwell and Fannie Abbell Teaching Fellowship in Judaic Studies (1954) Created by the late Maxwell Abbell of Chicago, Illinois, to support a teaching fellowship in the field of Judaic Studies.

Allied Chemical Foundation Fellowship (1964) Established by the Allied Chemical Foundation of New York. This Fellowship will be awarded, at the University's discretion, to an outstanding graduate student, a citizen of the United States or Canada, who is concentrating in the field of Chemistry, and who has demonstrated an aptitude for research in science.

Jeannette and Louis Altschul Fellowship Fund (1946) Established by the late Jeannette and Louis Altschul of New York City to help subsidize the education of gifted students to complete their graduate program.

Bernard Aronson Teaching Fellowship (1964) Established by Mr. Bernard Aronson of New York, New York, to provide teaching fellowships for graduate students who are concentrating in the sciences.

Charles C. Bassine Fellowship (1961) Established in honor of Mr. Charles C. Bassine of New York City by the Trustees of the Long Island Jewish Hospital on the occasion of his induction as a Fellow of the University, to be used to provide fellowship assistance for outstanding graduate students.

Beatrice Foods Company Fellowship (1962) Established through the generosity of the Beatrice Foods Company of Chicago, Illinois, to provide fellowship aid for gifted graduate students.

Beech-Nut Life Savers, Inc. Fellowship (1962) Established to support fellowship assistance for deserving graduate students through a grant from Beech-Nut Life Savers, Inc. of New York City.

Allan I. Bluestein Fellowship (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, to assist deserving students in the field of the humanities, particularly in literature, history and language.

Jacob and Rachel Bluestein Memorial Fellowship (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, in memory of his parents, to assist gifted students in the field of the humanities.

David Brenner Fellowship Fund (1961) An annual fellowship for a deserving graduate student in the social sciences, preferably from abroad and from a newly developing area or country.

Otto and Mynette Bresky Fellowship Endowment (1962) Established by Mr. and Mrs. Otto Bresky of Newton, Massachusetts, the income of which will help to subsidize the graduate education of a gifted and worthy student.

Harry and Esther Brown Fellowship (1963) Established by Mr. and Mrs. Harry Brown of Haverhill, Massachusetts, to provide assistance to a graduate student in the Lown Institute for Contemporary Jewish Studies.

Morris Burg Teaching Fellowship (1957) Established by Mrs. Mildred H. Burg of Brookline, Massachusetts, in memorial tribute to her husband, to support a teaching fellowship in the area of human relations.

Milton H. Callner Fellowship Fund (1966) Established with funds provided under the will of Milton H. Callner, late of Chicago, Illinois, supplemented with matching funds from the Ford Foundation grant, the income to be used for annual fellowships in international affairs or politics.

Campbell Soup Fellowship (1961) Four tuition fellowships established by the Campbell Soup Co. as part of its Aid to Education Program and assigned to gifted students in the Florence Heller School for Advanced Studies in Social Welfare.

Sol Cantor Fellowship (1963) Established as a memorial tribute to his mother, Mrs. Pearl Cantor, by Sol Cantor of New York. This fund will provide assistance to needy and promising graduate students.

Joseph and Frances Reitman Caplan Fellowship Endowment (1965) Established in memory of her husband by Frances Reitman Caplan of New York City, the income to be used for the assistance of deserving students and for the promotion of studies that are preparation for a legal career, with special emphasis in the field of international law.

Aida Coburn Fellowship (1964) Established in honor of his wife by the late Abbott Coburn of Chicago, Illinois. This fellowship will provide partial assistance to a deserving graduate student.

Maxfield J. and Lillian R. Cohen Fellowship Endowment (1965) Established by Mrs. Lillian R. Cohen of Los Angeles, California, in loving tribute to her late beloved husband, Maxfield J. Cohen. The income from this fund will provide assistance to graduate students selected by the University to help them complete advanced training.

Dora K. Cohn Fellowship in Social Welfare (1959) Set up as a memorial by Mr. Ruby P. Cohn of St. Louis, Missouri, to subsidize graduate study in the School for Advanced Studies in Social Welfare.

Jack Cohn Memorial Science Fellowships (1962) Established by the Artists Foundation, Inc. of New York City (Mr. Robert Cohn, President), in memory of the late Jack Cohn, to provide for the next five years for the annual award of three fellowships of \$4,500 each, on the basis of merit and need, to students enrolled in the Graduate School in the area of science.

Combined Jewish Appeal of Greater Boston-Associated Jewish Philanthropies Fellowship (1959) A \$5,000 fellowship to be awarded to a student pursuing graduate work in social welfare.

Leon J. Coslov Fellowship (1957) Established by Mr. Leon J. Coslov of Glassport, Pennsylvania, to support a teaching fellowship.

Dan Danciger Graduate Fellowship Trust Fund (1958) Established through a \$250,000 bequest from the estate of the late Dan Danciger of Fort Worth, Texas, to provide fellowship assistance for graduate students of outstanding academic potential to enable them to pursue academic careers regardless of financial limitations.

Frank J. Doft Memorial Fellowship Endowment (1965) Established as a memorial to their son and brother by the Doft Family of Lawrence, Long Island, New York. The income will provide fellowships for deserving graduate students who are concentrating in the life sciences.

Durkee Graduate Fellowship in Biochemistry (1962) A graduate fellowship established by the Durkee Famous Foods of Bethlehem, Pennsylvania (The Glidden Company), for support of a deserving graduate student in Biochemistry. This fellowship will provide a grant to the student, payment of tuition and an allowance for each dependent.

Eagle Food Centers Foundation Fellowship (1962) Established through the generosity of the Eagle Food Centers Foundation of Rock Island, Illinois, to subsidize gifted graduate students.

Ida and Mark A. Edison Teaching Fellowship (1955) Established as a memorial to Ida and Mark A. Edison by the Shapiro brothers of Auburn, Maine, to support a teaching fellowship.

Harry E. Eisenrod and Mel Dorfman Graduate Fellowship (1964) Established by Mr. Harry E. Eisenrod and Mr. Mel Dorfman through the Household Manufacturing Company of Los Angeles, California, to provide assistance to deserving graduate students.

Max and Frances Elkon Fellowship Endowment (1962) Established by Mr. and Mrs. Max Elkon of New York City. The income to be used to provide fellowship assistance for gifted graduate students.

Esso Education Foundation Teaching Fellowship (1956) A grant from the Esso Education Foundation of Standard Oil Company (New Jersey), assigned as a teaching fellowship, to assist in the undergraduate educational program.

Meyer Factor Fellowship (1963) Established by Harold E. Factor of Chicago, Illinois, to provide fellowship assistance to gifted and needy graduate students.

Federation of Jewish Philanthropies of New York Fellowship (1962) Established by the Federation of Jewish Philanthropies of New York, for the support of a deserving student from the New York metropolitan area, at the Florence Heller School for Advanced Studies in Social Welfare.

Nathan and Vivian Fink Fellowship (1963) Established by Mr. and Mrs. Nathan Fink of New York, to help subsidize a gifted graduate student in the Lown Institute for Contemporary Jewish Affairs.

Jacob Finkelstein and Sons, Inc. Fellowship (1963) Established by the Finkelstein Family of Woonsocket, Rhode Island, to provide fellowship assistance over a three-year period for a deserving graduate student.

M. B. and Fannie Finkelstein Foundation Research Fellowship Grant (1961) Established by the trustees of the M. B. and Fannie Finkelstein Foundation of Houston, Texas, to help subsidize an outstanding student who wishes to go into graduate research work.

Mr. and Mrs. Gus Fisher Fellowship (1966) Established to honor Mr. and Mrs. Gus G. Fisher of Miami Beach, Florida, by offering assistance to a student doing his or her graduate work.

Charlotte and Elliot Fleisher Fellowship Endowment (1966) Established by Mr. and Mrs. Elliot Fleisher of Newton, Massachusetts. The income to be used to provide fellowship grants to aid young men and women of unusual talent or potential to pursue graduate studies within any academic department of the University or within any disciplinary program.

Harry K. and Emma R. Fox Charitable Foundation Fellowship (1962) Established by the Harry K. and Emma R. Fox Charitable Foundation of Cleveland, Ohio, to support a partial fellowship for a deserving graduate student who, without this assistance, would be unable to complete his advanced studies.

General Foods Fund Fellowship Grant (1961) Established by the General Foods Fund Inc. of New York City, for fellowship assistance to outstanding graduate students who are concentrating in the area of the life sciences.

Leo Gerstenzang Science Fellowship Endowment Fund (1962) Established by Mrs. Leo Gerstenzang of New York City and Palm Beach, Florida, in memory of her late husband. The income will be used for fellowships to subsidize graduate education and research for deserving graduate students in the field of science.

Gillette Graduate Teaching Fellowship (1961) Established by the Gillette Company of Boston, Massachusetts, for an annual graduate teaching fellowship.

Harry and Elka Gitlow Fellowship Endowment in Humanistic Studies (1959) Established by Mr. Albert Gitlow of New York City and members of the family as a memorial tribute.

Albert A. Glassman Fellowship (1962) Established by a bequest of Albert A. Glassman, late of Cleveland, Ohio. This fund will be used for research in the field of medicine or biochemistry.

Herman Golanty Memorial Fellowship (1956) Established by Mr. George C. Golanty of Detroit, Michigan.

Beatrice I. and Jacob Goldberg Fellowship Endowment Fund (1962) Established by Mr. and Mrs. Jacob Goldberg of Brookline, Massachusetts, in honor of their fiftieth wedding anniversary. The income from this fund is to be used to support fellowships.

Mollie Goldberg Memorial Fellowship Endowment (1963) Established as a memorial tribute by Isadore J. Goldberg of Chicago, and Milton D. Goldberg of Glencoe, Illinois. The income will be used to provide an annual fellowship for a deserving student in the Florence Heller Graduate School for Advanced Studies in Social Welfare.

Charles Goldman Teaching Fellowship (1963) Established to honor the induction of Charles Goldman as a Fellow of the University by his friends and associates. The income from this fund will provide assistance for a deserving graduate student.

Alexander Goldstein Teaching Fellowship in Social Science (1950) The income from this \$25,000 fund will be used to support a teaching fellowship in the field of social science. Established as a memorial to her brother by the late Miss Lutie Goldstein of San Francisco, California.

Edward Goldstein Teaching Fellowship (1954) A grant from Mr. Edward Goldstein of Boston, Massachusetts, to support a teaching fellowship.

Abraham Goodman Fellowship Endowment Fund (1962) Established by Mr. and Mrs. Abraham Goodman of Waban, Massachusetts. Temporarily, all income will be used to subsidize graduate fellowships. Once a permanent identification has been made, the capital fund will be transferred for that purpose.

Mr. and Mrs. Ben Gordon Fellowship (1963) Established by Mr. and Mrs. Ben Gordon of Harrison, New Jersey, to provide fellowship assistance for deserving graduate students.

Anna C. Greenstone Memorial Fellowship (1952) Established by her children, Mr. Charles R. Greenstone of San Francisco, California, the late Mr. Stanford M. Green of San Francisco, California, and Mrs. Simon Rubin of New Bedford, Massachusetts.

Karin Grunebaum Cancer Research Foundation Fellowship (1966) Established by the Karin Grunebaum Cancer Research Foundation, Boston, Massachusetts, to offer assistance for a graduate student involved and concerned with cancer-related research.

Gulf Oil Corporation Fellowship (1959) A grant from the Gulf Oil Corporation's Aid to Education Program, to be assigned for fellowship assistance in the School for Advanced Studies in Social Welfare.

Edward Hano Fellowship Endowment (1958) The income from this fund is to provide supplementary fellowship assistance to gifted graduate students enrolled in the School for Advanced Studies in Social Welfare. A tribute to the late Edward Hano, of Granby, Massachusetts, by his wife and members of the family.

Hartog of California Graduate Fellowship Fund (1961) Established by Hartog of California, to help a graduate student interested in the field of "The History of Ideas."

Dr. Maurice B. Hexter Fellowship (1961) Established as a tribute to Dr. Maurice B. Hexter of New York City by his friends. This fellowship is to be given to a deserving student at the Florence Heller School for Advanced Studies in Social Welfare.

M. Z. and Hannah Holland Fellowship Endowment (1964) Established by the family and friends of Mr. and Mrs. M. Z. Holland of Chicago, Illinois, to honor their fiftieth wedding anniversary and, also, Mr. Holland's seventy-seventh birthday. The income from this fund will offer assistance to deserving graduate students.

Benjamin S. and Ida F. Hornstein Fellowships (1966) Established by Mr. and Mrs. Benjamin S. Hornstein of New York. The income will provide fellowship assistance for either worthy students who are concentrating in the area of Judaic studies, or to aid in the publication of research studies in the field of Judaic culture and education.

Peter A. Isaacson Fellowship in the Lown Institute for Contemporary Jewish Studies (1963) Established by Mr. Peter A. Isaacson of Lewiston, Maine, for gifted students concentrating in the field of Judaic studies.

Eddie Jacobson Memorial Foundation Fellowship (1957) Two fellowships in the amount of \$2,000 each for gifted students from Israel, who are preparing themselves at Brandeis University for a more effective career of service in the State of Israel. Established by friends of the late Eddie Jacobson of Kansas City, under the chairmanship of former President Truman and Mr. George Roth.

Jewish Community Center of Hunts Point, Bronx, New York Fellowship Endowment (1962) Established by the Trustees of the Jewish Community Center of Hunts Point, New York, so that the income may be used for gifted and worthy graduate students who are concentrating in the history and literature of traditional Judaism. Preference is given to students who come from the metropolitan New York area.

Jewish Community Federation of Cleveland Fellowship (1962) Established by the Jewish Community Federation of Cleveland for the support of a deserving student from the Cleveland, Ohio area, at the Florence Heller School for Advanced Studies in Social Welfare.

Max Kagan Fellowship (1962) Established by Mr. Max Kagan of Bangor, Maine, in support of a deserving graduate student at the Philip W. Lown Institute of Advanced Judaic Studies.

Robert E. and Harry A. Kangesser Fellowship Trust (1951) Established by Messrs. Robert E. and Harry A. Kangesser of Cleveland, Ohio, the income to be used for teaching fellowships.

Henry Kaufmann Fellowship in Group and Community Development (1964) Established by the Henry Kaufmann Foundation, Judge Joseph M. Proskauer, Norman S. Goetz, and Samuel Lemberg, all of New York City. The income from this endowed fellowship will support the teaching activities of a faculty member whose doctoral students are specializing in the problems of small groups, neighborhood organizations, and group and community development.

Myer and Ida Kirstein Fellowship Endowment Fund (1963) Established by Mr. and Mrs. Myer Kirstein of Swampscott, Massachusetts, to provide aid to worthy graduate students in any field of concentration.

Richard Kramer Memorial Fellowship (1961) Established in memory of their son, Richard, by Mr. and Mrs. Louis Kramer of Philadelphia, Pennsylvania, to help subsidize a graduate student concentrating in the field of biochemistry.

Lillian Kratter Fellowship (1960) Established in her honor by her husband, Mr. Marvin Kratter of New York City, to be assigned to a female student concentrating in the Graduate School of Music.

Marvin Kratter Fellowship (1960) Established in his honor by his wife, Mrs. Lillian Kratter of New York City, to be assigned to a male student concentrating in the graduate area of biology.

Hyman Kuchai Fellowship (1963) Established by Mr. Hyman Kuchai of Harrison, New York, to provide fellowship assistance for deserving graduate students.

William Lakritz Fellowship Endowment in Chemistry (1962) Established by the daughters of William Lakritz of New York City and their husbands, Mr. and Mrs. Jack N. Friedman of Glencoe, Illinois, and Dr. and Mrs. Henry Graham of

Los Angeles, California, to be used in partial subsidy of graduate students who concentrate in the field of chemistry.

Ida S. Latz Foundation Fellowship (1959) Established by this Foundation to make available a fellowship to a disabled veteran for study at the School for Advanced Studies in Social Welfare.

LCK Fellowship in Social Science (1957) Established by an anonymous friend of the University to support a fellowship in the area of the social sciences, with preference in the field of economics.

Mathus Lemberg Fellowship Endowment (1962) Established by Bernard Lemberg of Old Bridge, New Jersey, and Leon Lemberg of Coral Gables, Florida, in memory of their beloved father so that the income may serve as tuition subvention for graduate students.

Levinson Teaching Fellowship in Biology (1951) Established by the James and Rachel Levinson Foundation of Pittsburgh, Pennsylvania.

Minnie Lewis Fellowship (1963) Established by Mr. George I. Lewis of Portland, Maine, to provide assistance to a deserving graduate student in the Lown Institute for Contemporary Jewish Studies.

Dr. Meno Lissauer Teaching Fellowship in Natural Science (1957) Set up through a major gift by the late Dr. Meno Lissauer of New York City and the birthday tributes of his colleagues in the Metals and Mining Industry.

P. Lorillard and Company Fellowship (1962) Established through P. Lorillard and Company of New York City to help subsidize the education of gifted students to complete their graduate program.

Charles Lubin Fellowship (1963) Established at the annual Chicago dinner by a group of his friends to honor Mr. Charles Lubin. This scholarship will provide assistance to a deserving student.

Theodore Roosevelt McKeldin Fellowship (1957) Established by friends of former Governor McKeldin of Maryland as a tribute to him. To be used to subsidize gifted graduate students who plan to concentrate in the areas of political science and government.

Abraham Mendelowitz Fellowship Endowment Fund (1959) Established by the Millinery Workers Health and Welfare Fund in honor of Mr. Abraham Mendelowitz of New York City on the occasion of his sixty-fifth birthday. To subsidize outstanding scholars so that they may continue their studies and medical research in biochemistry and microbiology.

Merrill Foundation Fellowships (1961) Established by a gift from the Charles E. Merrill Trust of Boston, Massachusetts, to encourage gifted scholars in the study of all aspects of Jewish life, and to develop Jewish community leadership, scholarship and teaching, especially on the university level.

Morris Messing Fellowship (1964) Established by Mr. Morris Messing of Nutley, New Jersey, to provide fellowship assistance for deserving graduate students.

Hyman Miller Fellowship (1963) Established by Mr. Hyman Miller of Auburn, Maine, to provide assistance to a graduate student in the Lown Institute for Contemporary Jewish Studies.

Joseph Millman Memorial Foundation Fellowship (1964) Established by the Joseph Millman Memorial Foundation of Villas, New Jersey, through Mr. Stanley

Rappaport. This fund will provide fellowship assistance for a gifted graduate student. Preference is to be given to applicants who are residents of Cape May County, New Jersey.

National Biscuit Company Fellowship (1962) A grant from the National Biscuit Company of New York City to provide fellowship support for deserving graduate students.

New York Raincoat Manufacturers Association Fellowship (1963) Established by the New York Raincoat Manufacturers Association of New York City, New York, through Mr. Simon Cohen to provide fellowship assistance for deserving graduate students.

David K. Niles Teaching Fellowship in American Government (1957) To be assigned in memory of a Trustee of the University, who served with distinction as administrative assistant to President Roosevelt and President Truman, for a worthy graduate student who plans for a career in American government service.

Peace Corps Scholarship-Fellowship Fund (1965) Established by the University to offer scholarship and fellowship assistance to qualified young men and women who have completed their tour of duty with the Peace Corps and are seeking to complete their educational training.

Lillian Persky Palais Endowment (1960) Established by Mr. and Mrs. Abraham S. Persky of Worcester, Massachusetts, in memory of Mr. Persky's sister, as an endowment whose income in perpetuity is to subsidize the tuition of gifted graduate students so that they may complete their science training.

Permanent Charity Fund, Incorporated Fellowships in Social Welfare (1962) Graduate fellowships contributed by the Committee of the Permanent Charity Fund, Incorporated of Boston, Massachusetts, for financial aid to deserving students at the Florence Heller School for Advanced Studies in Social Welfare.

Maurice Pollack Foundation Research Fellowship (1956) Established by the Maurice Pollack Foundation of Quebec, Canada, to enable gifted graduate students to pursue research programs in the field of Judaic studies.

Prince Macaroni Manufacturing Company and the Cleghorn Folding Box Company Fellowship (1962) Established to provide fellowship assistance to deserving graduate students by the Prince Macaroni Manufacturing Company and its subsidiary, the Cleghorn Folding Box Company, of Lowell, Massachusetts.

Norman S. Rabb Fellowship (1962) Established by business associates of the Chairman of the Board of Trustees of Brandeis University in tribute to him. This fellowship is to be granted for the support of a deserving graduate student.

Louis M. Rabinowitz Foundation, Inc. Fellowship (1962) Established by the Louis M. Rabinowitz Foundation, Inc. of New York City for the support of a foreign student in the social sciences, preferably from Africa.

Bertha C. Reiss Memorial Fellowship Endowment Fund (1954) Created by the late Dr. Henry Reiss of New York City for the establishment of the Bertha C. Reiss Memorial Fellowship or teaching fellowships. Awards are to be made to students on the basis of their accomplishments in the field of research and/or teaching.

Harry and Mildred Remis Music Fellowships (1963) Established by Mr. and Mrs. Harry Remis of Swampscott, Massachusetts. The income from this fund to provide fellowship support for gifted advanced students who are enrolled in the graduate music department at the University.

Charles Revson Fellowship Trust (1962) A capital fund of \$1,000,000 established by Charles Revson of New York City, to be assigned to outstanding students who wish to pursue their graduate studies in the areas of biochemistry, chemistry, physics, biophysics, mathematics or psychology. The fellowships will be granted annually in the range of \$3,000-\$4,000 and may be renewed for three or four years.

Benjamin Rosenberg Teaching Fellowship Endowment (1959) Established as a memorial tribute by Mr. and Mrs. Joseph Rosenberg of Fox Point, Wisconsin, to support a teaching fellowship in the field of Polymer Chemistry.

Leo L. Rosenhirsch Memorial Fellowship Fund (1961) Established by Mr. Alfred E. Rosenhirsch and Mrs. Hilda Nussenfeld of New York City to help cover tuition and other expenditures for gifted and needy graduate students.

Edwin M. Rosenthal Teaching Fellowship in the Life Sciences (1961) Established to honor the eighty-second birthday of Edwin A. Rosenthal of Hollywood, Florida, by his daughter, Mrs. Hoke Levin of Detroit, Michigan, to be assigned as a teaching fellowship for a graduate student concentrating in the life sciences.

Julius Rosenwald Teaching Fellowships (1952) A series of teaching fellowships in memory of the distinguished philanthropist, Julius Rosenwald, established by his daughter, the late Mrs. Adele Rosenwald Levy of New York City, to subsidize the development and teaching of gifted graduate students.

Dr. Vera Rubin Fellowship (1960) Established by Dr. Vera Rubin of New York City for a fellowship in the field of anthropology.

Abram L. Sachar Fellowship (1961) Established by B'nai B'rith in honor of the Honorary Chairman of the National Hillel Commission, to underwrite part of the expenses for a gifted student at Brandeis University who joins the Hiatt Institute in Israel to strengthen background in Israeli Studies.

Dr. Harry Sagsansky Fellowship Trust (1963) Established by Dr. Harry Sagsansky of Brookline, Massachusetts, in the amount of \$25,000 annually, to be used for subsidies to graduate students so that they may be helped in the completion of their specialized training.

Samuel and Rae Salny Fellowship Endowment in Social Relations (1952) Established by Mrs. Samuel M. Salny and the late Mr. Salny of Boston, Massachusetts, to support a fellowship in the field of social relations.

Shirley and Maurice Saltzman Fellowship Endowment Fund (1961) Established by Mr. and Mrs. Maurice Saltzman of Cleveland, Ohio, so that the income may be assigned to gifted and advanced students who are concentrating in the humanities.

David Sarnoff Fellowship (1959) Established by the RCA Education Committee to subsidize a gifted and needy student in the graduate program in physics.

Samuel D. and Goldie Saxe Fellowship in Science (1955) Established by Mrs. Goldie Saxe of Brookline, Massachusetts, and children, to support research and teacher training in the field of science.

Edward A. Schaffer Teaching Fellowship Endowment (1959) Established by Mrs. Edward A. Schaffer of New York City, in memorial tribute to her husband, to support a teaching fellowship in the field of humanistic and social sciences.

Alice Boughton Schaffner Memorial Fellowship Endowment (1961) Established under the terms of the will of the late Alice Boughton Schaffner by her designators, Winifred Raushenbush and James Rorty. The income from this fund

will be used to provide fellowship support for outstanding women students from racially underprivileged families.

Rabbi Solomon Scheinfeld Fellowship Endowment (1959) Established by the Sylvia and Aaron Scheinfeld Foundation of Chicago, Illinois, as a memorial tribute to Mr. Scheinfeld's distinguished father. The income to be used for fellowship assistance to gifted graduate students, preferably from Wisconsin, in the School for Advanced Studies in Social Welfare.

S. H. Scheuer Fellowship (1960) Established in the School for Advanced Studies in Social Welfare to subsidize the doctoral preparation of a gifted graduate student enrolled in the School.

Ida Hillson Schwartz and Elias Edward Schwartz Memorial Fellowship Endowment Fund (1949) Established as a memorial to Ida Hillson Schwartz of Winter Hill, Massachusetts, by her family. The Fund has been augmented by a perpetuity as an exchange fellowship, either to bring gifted young people from Israel to Brandeis or to send Brandeis University students to the Hebrew University in Israel.

Morris Sepinuck Teaching Fellowship (1954) Created as a memorial to Morris Sepinuck by his children, Messrs. Samuel and Nathan Sepinuck, and Mrs. George Sorkin of Boston, Massachusetts.

Fannie and Simon Shamroth Fellowship Endowment (1963) Established by the children of Fannie and Simon Shamroth of Lynn, Massachusetts. The income from this fund will be used to help subsidize deserving graduate students.

Leonard Shanhouse Fellowship (1963) Established by Mr. Leonard Shanhouse of Magnolia, Arkansas, to provide fellowship assistance for deserving graduate students.

Isaiah Leo Sharfman Teaching Fellowship Endowment (1956) Established by Mr. and Mrs. Samuel R. Rosenthal of Highland Park, Illinois, in tribute to Professor Sharfman of the University of Michigan, with preference given to teaching fellows in the area of economics.

Mona Bronfman Sheckman Memorial Teaching Fellowship (1952) A grant from the Mona Bronfman Sheckman Memorial Foundation of New York City, to support a teaching fellowship.

Mr. and Mrs. Abraham Smith Memorial Fellowship (1962) Established by Mr. Samuel Smith of Allentown, Pennsylvania, in memory of his parents, Mr. and Mrs. Abraham Smith, to provide fellowship assistance for worthy graduate students.

Jack and Irene Hayes Solomon Foundation Fellowship Endowment (1962) Established by the Jack and Irene Hayes Solomon Foundation of New York City, the income to be used to support fellowships for gifted graduate students.

Mr. and Mrs. Harry Stadler Teaching Fellowship in Music (1956) Established by Mr. and Mrs. Harry Stadler of Hollywood, Florida, in memory of their loving mothers, Sarah Stadler and Etta Berger, to support a teaching fellowship in the field of music.

Joseph F. Stein Foundation, Inc. Fellowship (1959) Established by the Joseph F. Stein Foundation, Inc. through Mr. Joseph F. Stein of New York City, for fellowship study in the School of Advanced Studies in Social Welfare.

Dr. and Mrs. Siegfried F. Strauss Fellowship (1961) Established by Dr. and Mrs. Siegfried F. Strauss of Chicago, Illinois, to subsidize a gifted graduate student working in the field of social welfare.

Sunshine Biscuits, Incorporated Fellowship (1962) Established through a grant from Sunshine Biscuits, Incorporated of Long Island City, New York, to provide fellowship assistance for deserving graduate students.

Gertrude W. and Edward M. Swartz Fellowship Endowment Fund (1954) Established by Mr. and Mrs. Edward M. Swartz of Brookline, Massachusetts, to support a teaching or research fellowship.

David Tannenbaum Teaching Fellowship in Legal Institutions (1958) An endowment to honor the memory of David Tannenbaum of Beverly Hills, California, established by his friends and admirers.

Tanson Enterprises Inc. Fellowship (1961) A fellowship set up by Tanson Enterprises, Inc. of New York City, to subsidize the graduate training of an outstanding student in the School for Advanced Studies in Social Welfare.

Ben Tobin Teaching Fellowship (1955) Established by Mr. Ben Tobin of Hollywood, Florida, to support a fellowship in the field of science.

Universal Match Foundation Fellowship (1957) A stipend of \$3600 to be awarded to a graduate student, or students, who are concentrating in the fields of physics, chemistry, biochemistry or microbiology, set up by the Universal Match Foundation of St. Louis, Missouri.

Harry Uviller Fellowship (1962) Established by friends and associates of Harry Uviller, in appreciation for his many years of distinguished service as an impartial arbitrator, and his many other contributions to the advancement of the needle trades industry and the preservation of industrial peace in New York. This fellowship will provide assistance to deserving graduate students.

Rose Mary Waga Fellowship Endowment (1964) Established by Mr. Peter E. Klein of Cleveland, Ohio, as Trustee to provide, in perpetuity, assistance to talented and needy students in the Graduate School.

Leo Wasserman Graduate Fellowship (1962) Established through a gift from the Leo Wasserman Foundation as a memorial to Leo Wasserman, late of Brookline, Massachusetts; the income to be devoted to the aid of graduate students in the humanities, the social sciences, and the field of social work.

Herman Weisselberg Memorial Fellowship (1957) Established as a memorial tribute by Mr. Arnold Weisselberg of Long Island City, New York, to support a fellowship.

Carrie Wiener Teaching Fellowship (1950) The income from this \$25,000 fund is to be used for a fellowship, established by Mr. Herman Wiener of Toledo, Ohio, in the name of his wife.

Leon G. Winkelman Fellowship Endowment Fund (1959) Established by the Leon G. and Josephine Winkelman Foundation of Detroit, Michigan, as a memorial tribute to Leon G. Winkelman, to subsidize a graduate fellowship in the field of gerontology.

Benjamin Yeager Teaching Fellowship (1952) Established by Mr. Benjamin Yeager of Sullivan County, New York, for a teaching fellowship.

Paul Ziffren Fellowship (1962) Established by Mr. Paul Ziffren of Los Angeles, California, to provide fellowship assistance for worthy and deserving graduate students concentrating in the social sciences.

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* * * * *

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Morris Carnovsky, A.B.	<i>Professor of Theater Arts</i>
Nicolas Carone	<i>Visiting Professor of Fine Arts</i>

* On Leave, 1966-67.

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- John P. Carrico, B.Sc., Ph.D. *Instructor in Physics*
 John L. Challifour, B.A., Ph.D. *Lecturer in Physics*
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 Herman T. Epstein, M.A., Ph.D. *Professor of Biophysics*
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* On Leave, 1966-67.

** On Leave, Spring Term, 1966-67.

Creighton Gilbert, B.A., Ph.D.

Ira H. Gilbert, A.M., Ph.D.

David H. Gillespie, B.S., Ph.D.

Raymond S. Ginger, A.M., Ph.D.**

Nahum Norbert Glatzer, Ph.D.**

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Abraham Goldin, M.A., Ph.D.

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Peter Grippe

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Eugene P. Gross, A.M., Ph.D.

Allen R. Grossman, M.A., Ph.D.

Lawrence Grossman, B.A., Ph.D.

Ernest Grunwald, B.A., Ph.D.

Benjamin Halpern, Ph.D.

Joel M. Halpern, A.B., Ph.D.*

Martin Halpern, M.A., Ph.D.

Louis Z. Hammer, M.A., Ph.D.

L. Davis Hammond, B.A.

Philip C. Hammond, Jr., M.A., Ph.D.

Andras P. Hamori, A.B., Ph.D.

Eugenia Hanfmann, Ph.D.

Victor Harris, M.S., Ph.D.

Robert W. Hartman, A.M., Ph.D.

Elsie Hasskarl, B.A.

Thomas J. Hegarty, A.M., Ph.D.*

Peter Heller, Ph.D.

James B. Hendrickson, M.A., Ph.D.

Jean Hendry, M.A., Ph.D.

Donald Hindley, M.A., Ph.D.*

Milton Hindus, B.A., M.S.

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Christoph Hohenemser, B.A., Ph.D.

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Assistant Professor of Astrophysics

Assistant Professor of Biology

Professor of History

Michael Tuch Professor of Jewish History

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Assistant Professor of Politics

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Professor of Physics

Assistant Professor of English

Associate Professor of Biochemistry

(Career Award, National Institutes of Health)

Professor of Chemistry

Associate Professor of Near Eastern Studies

(on the Rabbi Abraham Joseph and Leah Factor Foundation)

Associate Professor of Anthropology

Associate Professor of Theater Arts

Visiting Assistant Professor of Philosophy

(Wellesley College)

Instructor in French

Associate Professor of Mediterranean

Archeology

Instructor in Mediterranean Studies

Professor of Psychology

Professor of English

Assistant Professor of Economics

Instructor in Biology

Assistant Professor of History

Assistant Professor of Physics

Professor of Chemistry

Visiting Assistant Professor of Anthropology

Assistant Professor of Politics

Peter and Elizabeth Wolkenstein

Professor of English

Assistant Professor of Anatolian Studies

Assistant Professor of Physics

* On Leave, 1966-67.

** On Leave, Spring Term, 1966-67.

Thomas C. Hollocher, Jr., B.S., Ph.D.
 Stephen F. Holtzman, B.S.
 Benjamin B. Hoover, M.A., Ph.D.**
 Everett C. Hughes, A.B., Ph.D.
 John M. Hughes, B.S.
 Avi Hurvitz, B.A., M.A.
 Robert F. Hutton, A.M., Ph.D.
 Oscar Janowsky, M.A., Ph.D.

William P. Jencks, M.D.**
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 Sheridan W. Johns, III, M.A., Ph.D.
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 Gabor Kalman, D.Sc.
 David Kaplan, A.M., Ph.D.
 Nathan O. Kaplan, A.B., Ph.D.
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 George A. Kelly, M.A., Ph.D.

Albert Kelner, M.S., Ph.D.

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 Lawrence E. Kirsch, M.S., Ph.D.
 James B. Klee, M.A., Ph.D.
 Lucille H. Klee, M.A., Ph.D.
 Attila O. Klein, B.A., Ph.D.
 Karen W. Klein, M.A., Ph.D.
 Daniel J. Kleitman, A.M., Ph.D.*
 Robert Lincoln Koff, B.Mus.***

Joseph J. Kohn, M.A., Ph.D.*
 Ira Konigsberg, M.A., Ph.D.*
 Isaac Kramnick, B.A., Ph.D.
 Louis Kronenberger, Litt.D.
 Kenneth Kustin, B.Sc., Ph.D.

Joseph C. Landis, M.S., Ph.D. *Visiting Associate Professor of Yiddish Literature
 (on the Jacob Berg Foundation)*

Frederic C. Lane, A.M., Ph.D. *Visiting Professor of History
 (Johns Hopkins University)*

Robert V. Lange, A.M., Ph.D. *Assistant Professor of Physics*
 Hubert P. LeBlanc, Jr. *Instructor in Physical Education*
 Susan Leeman, B.A., Ph.D. *Adjunct Assistant Professor of Biochemistry*
 Louis Lefebvre, Ph.D. *Fred C. Hecht Professor of International Economics*
 Eugene Lehner *Consultant in Chamber Music*

Assistant Professor of Biochemistry
Assistant Professor of Anthropology
Associate Professor of English
Professor of Sociology
Assistant Professor of Physical Education
Lecturer in Hebrew Language
Assistant Professor of Chemistry
*Jacob Ziskind Visiting Professor of
 History and Contemporary Jewish Studies*
Rosenstiel Professor of Biochemistry
Lecturer in Near Eastern and Judaic Studies
Assistant Professor of Politics
Professor of Psychology
Assistant Professor of Chemistry
Assistant Professor of Physical Education
Visiting Professor of Physics
Assistant Professor of Anthropology
Rosenstiel Professor of Biochemistry
Visiting Professor of Sociology
Professor of History
*Meshulam and Judith Riklis Professor of
 Behavioral Science*
Abraham S. and Gertrude Burg
Professor of Microbiology
Assistant Professor of English
Assistant Professor of Physics
Associate Professor of Psychology
Lecturer in Chemistry
Assistant Professor of Biology
Instructor in English
Assistant Professor of Physics
*Associate Professor of Music and
 Artist-in-Residence*

Professor of Mathematics

Assistant Professor of English

Assistant Professor of Politics

Professor of Theater Arts

Assistant Professor of Chemistry

Assistant Professor of Chemistry

Assistant Professor of Chemistry

Assistant Professor of Chemistry

Assistant Professor of Chemistry

Assistant Professor of Chemistry

Assistant Professor of Chemistry

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Assistant Professor of Chemistry

Assistant Professor of Chemistry

Assistant Professor of Chemistry

Assistant Professor of Chemistry

* On Leave, 1966-67.

** On Leave, Fall Term, 1966-67.

*** On Leave, Spring Term, 1966-67.

- Alan Lelchuk, M.A., Ph.D. *Assistant Professor of English*
 Max Lerner, A.M., Ph.D.** *Max Richter Professor of American Civilization and Institutions*
- Baruch A. Levine, M.A., Ph.D. *Assistant Professor of Hebrew Literature*
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(American Cancer Society Professorship)
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 John F. Matthews, B.A. *Associate Professor of Theater Arts*
 Alan L. Mayer, A.B., Ph.D. *Associate Professor of Mathematics*
 Eugene Meehan, Ph.D. *Visiting Associate Professor of Politics*
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- Bruce Jerome Mikel, B.A., M.A.** *Instructor in German*
 Paul H. Monsky, M.S., Ph.D. *Visiting Assistant Professor of Mathematics*

* On Leave, 1966-67.

** On Leave, Spring Term, 1966-67.

- Charles Moore, B.A., M.F.A. *Associate Professor of Theater Arts*
 W. G. Moore, M.A., Ph.D. *Jacob Ziskind Visiting Professor of French*
(St. John's College, Oxford)
- Ricardo B. Morant, M.A., Ph.D. *Professor of Psychology*
 Ruth Schachter Morgenthau, Ph.D. *Associate Professor of Politics*
 Martin Mueller, M.A. *Assistant Professor of English*
 William T. Murakami, A.B., Ph.D. *Assistant Professor of Biochemistry*
(American Cancer Faculty Research Award)
- Joseph S. Murphy, M.A., Ph.D.* *Assistant Professor of Politics*
 N. Richard Nash, B.S. *Associate Professor of Theater Arts*
 Ulric Neisser, M.A., Ph.D. *Adjunct Professor of Psychology*
 Howard Nemerov, B.A. *Professor of English*
 Anna Catherine Nichols, B.S., M.S. *Associate Professor of Physical Education*
 Ricardo Nirenberg, Ph.D. *Lecturer in Mathematics*
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 Richard J. Onorato, A.B., A.M. *Assistant Professor of English*
 Elisabeth M. Orsten, M.A., Ph.D. *Visiting Assistant Professor of English*
 Maria-Luisa Osorio, M.A., Ph.D. *Visiting Assistant Professor of Spanish*
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 Lisa R. Peattie, M.A. *Visiting Lecturer in Sociology*
 Hugh N. Pendleton, III, M.S., Ph.D. *Assistant Professor of Physics*
 Frances S. Perkins, B.S.E., M.Ed. *Lecturer in Psychology*
 Edwin Burr Pettet, A.B., Ph.D. *Samuel and Sylvia Schulman Professor of*
Theater Arts
- Robert Otto Preyer, M.A., Ph.D. *Professor of English*
 Philip Rahv *Professor of English*
 Harry Rand, M.D. *Adjunct Professor of Clinical Psychiatry*
 Esther Eugenie Rawidowicz, Ph.D. *Assistant Professor of German*
 Janine Reisman, A.B. *Lecturer in French*
 Karl M. I. Reisman, A.B., Ph.D. *Assistant Professor of Anthropology*
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and Social Thought
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 Myron Rosenblum, A.M., Ph.D. *Professor of Chemistry*
 Hugo Rossi, M.S., Ph.D. *Professor of Mathematics*
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(on the B. E. and Régine S. Levy Foundation)
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 Benson Saler, M.A., Ph.D. *Assistant Professor of Anthropology*
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 Nahum M. Sarna, M.A., Ph.D. *Associate Professor of Biblical Studies*
(on the Dora Golding Foundation)

* On Leave, 1966-67.

** On Leave, Fall Term, 1966-67.

Gordon Hisashi Sato, B.A., Ph.D.	<i>Associate Professor of Biochemistry (on the Rosenstiel Foundation)</i>
Jerome A. Schiff, B.A., Ph.D.	<i>Professor of Biology</i>
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* On Leave, 1966-67.

** On Leave, Spring Term, 1966-67.

- Serge A. Timasheff, M.S., Ph.D. *Professor of Biochemistry*
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* On Leave, 1966-67.

** On Leave, Fall Term, 1966-67.

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Samuel James Davidson, Ph.D.

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Postdoctoral Fellow in Biochemistry

Postdoctoral Fellow in Biochemistry

Harkness Fellow in Biology

Research Associate in Biochemistry

Research Associate in Physics

Postdoctoral Fellow in Biochemistry

NIH Postdoctoral Fellow in Biochemistry

Senior Research Associate in Biochemistry

Postdoctoral Fellow in Biochemistry

ONR Postdoctoral Research Associate in Mathematics

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Senior Research Associate in Biochemistry

Research Associate in Physics

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Postdoctoral Fellow in Chemistry

Postdoctoral Fellow in Biochemistry

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 Stanley G. Krane, Ph.D.
 Annette Krebs, M.A.
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 Ivan Kuvacic, Ph.D.
 Erwin Latzko, Ph.D.
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 James J. Lightbody, Ph.D.
 Fang-Jen Lin, M.D.
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Postdoctoral Fellow in Biochemistry
Research Associate in Psychology
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
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Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Chemistry
Senior Research Fellow in Philip W. Lown Institute
of Contemporary Jewish Studies
Research Fellow in Physics
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Chemistry
Research Associate in Chemistry
Research Associate in Physics
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Biochemistry
NIH Postdoctoral Fellow in Biology
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
U.S.D.A. Research Associate in Biochemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow (Trainee) in Biology
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
Visiting Scientist in Biochemistry
NIH Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Biochemistry
Research Associate in Psychology
NATO Postdoctoral Fellow in Biochemistry
Senior Postdoctoral Fellow in Sociology
Senior Research Associate in Biology
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow (Trainee) in Biology
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biochemistry
Senior Research Associate in Biochemistry
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Postdoctoral Fellow in Biochemistry

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 Yoshihiro Yasumura, M.D.
 Michael Zeldin, Ph.D.
 Estelle Cooper Zoll, Ph.D.

Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Biochemistry
Postdoctoral Fellow in Biology
ONR Postdoctoral Research Associate in Mathematics
Postdoctoral Fellow in Biochemistry
Research Associate in Physics
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Chemistry
Postdoctoral Fellow in Biochemistry
Senior Research Fellow in Philip W. Lown
Institute of Contemporary Jewish Studies
Research Associate in Biology
Postdoctoral Fellow in Chemistry
NIH Postdoctoral Fellow in Biochemistry
Research Associate in Physics
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Senior Research Associate in Biochemistry
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Postdoctoral Fellow in Biochemistry

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*Dean of Graduate School of Arts and Sciences
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Director

Business Administration

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Public Affairs

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Director

Wien International Scholarship Program

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Index

Academic Regulations	50
Administration of the University	200
Admission	44
Anthropology	68
Areas of Study and Courses	68
Auditing Courses	51
Biochemistry	75
Biology	81
Biophysics	89
Calendar	8, 9
Chemistry	91
Contemporary Jewish Studies	98
Credit for work done elsewhere	53
Degree Requirements, General	56
Directories	189
Dismissal	56
Dissertation	59
Employment	67
English and American Literature	101
Expulsion	56
Faculty	190
Fees	61
Fellowships	178
Financial Assistance	65
Foreign Students	48
Full-Time Resident status	54
General Description	24
General Information	41
Grades	52
Graduate Council	198
Health Office	43
History of American Civilization	107
History of Ideas	110
History of the University	41
Housing	42
Incompletes	52
Language Requirements	58
Leave of Absence	55
Mathematics	120
Mediterranean Studies	123

Music	129
Near Eastern and Judaic Studies	135
Part-Time Resident status	54
Philosophy	142
Physics	145
Politics	154
Program, change of	51
Psychology	160
Registration	50, 51
Research Assistantships	67
Research Associates and Fellows	198
Residence Requirements	53
Sociology	169
Special Students	55
Teaching Assistantships	66
University Organization	12
Withdrawal	56

Notes

Notes

Notes

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